Main article

Accounting education literature review (2010–2012)

Barbara Apostolou a,*, Jack W. Dorminey a,1, John M. Hassell b,2, Stephanie F. Watson c,3

a West Virginia University, Department of Accounting, College of Business and Economics, Morgantown, WV 26506-6025, United States
b Indiana University, Kelley School of Business Indianapolis, BS4012, 801 W. Michigan Street, Indianapolis, IN 46202-5151, United States
c University of Central Arkansas, Department of Accounting, 201 Donaghey, COB 204, Conway, AR 72035-0001, United States

ABSTRACT

This review of the accounting education literature includes 291 articles and 104 instructional cases published over the 3-year period, 2010–2012, in six journals: (1) Journal of Accounting Education, (2) Accounting Education: An International Journal, (3) Advances in Accounting Education, (4) Global Perspectives on Accounting Education, (4) Issues in Accounting Education, and (6) The Accounting Educators' Journal. This article updates prior literature reviews by organizing and summarizing recent additions to the accounting education literature. These reviews are categorized into four sections corresponding to traditional lines of inquiry: (1) curriculum, assurance of learning (AOL), and instruction; (2) educational technology; (3) faculty issues; and (4) students. Suggestions for educational research in all content areas are presented. For the first time in this series of literature reviews, we assess the data collection and empirical analysis methods and recommend adoption of more rigorous techniques moving forward. Articles presenting teaching materials and educational cases published in the same six journals during 2010–2012 are presented in an appendix, categorized by the courses for which they are appropriate.

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* Corresponding author. Tel.: +1 304 293 0091; fax: +1 304 293 0635.
E-mail addresses: barbara.apostolou@mail.wvu.edu (B. Apostolou), jack.dorminey@mail.wvu.edu (J.W. Dorminey), jhassell@iupui.edu (J.M. Hassell), swatson@uca.edu (S.F. Watson).
1 Tel.: +1 304 293 7853.
2 Tel.: +1 317 274 4805.
3 Tel.: +1 501 450 5317.

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1. Introduction

This review of the accounting education literature includes 291 articles and 104 instructional cases appearing in six journals during the period 2010–2012: (1) Journal of Accounting Education, (2) Accounting Education: An International Journal, (3) Advances in Accounting Education, (4) Global Perspectives on Accounting Education, (4) Issues in Accounting Education, and (6) The Accounting Educators’ Journal. This article is the ninth in a series of reviews first published in 1986, as summarized in Table 1, Panel A. The journals reviewed, according to time period, are presented in Table 1, Panel B with reference to the Panel A citation. For the purposes of adopting common nomenclature throughout this narrative and for ease of presentation, Table 2 summarizes abbreviations and corresponding definitions used throughout the manuscript.

Forty-seven issues of six journals are reviewed for this 3-year period. The issues contain a combination of empirical articles, descriptive articles, and instructional cases. Special topics, which are summarized in Table 3, are the focus of 14 of those issues in four of the journals reviewed. Special issues are dedicated to the specialty areas of AIS, audit, IFRS, taxation, and the first course in accounting; others cover general curricular issues and academic initiatives. Accounting Education: An International Journal dedicated seven of its 17 issues published during 2010–2012 to special topics covering the spectrum of accounting education, including the first issue exclusively on academic dishonesty.

The delineation between empirical and descriptive articles is a bit blurry because of what we see as a shift in experimental rigor in all accounting research in the past 20 years. Education research tends to use the classroom as the laboratory; ideas are developed and tested by asking students about their perceived learning and/or satisfaction with a specific pedagogy. For purposes of the current literature review, an empirical study is one in which conclusions are derived from an analysis of data collected. Articles that report student perceptions (without statistical analysis) regarding a teaching innovation are, for purposes of this review, generally classified as descriptive. An overview of the journals reviewed by four topical areas with a breakdown according to whether the article is (1) descriptive, (2) empirical, or (3) an instructional case is presented in Table 4. Of the 291 descriptive or empirical articles reviewed, 126 (43.3%) are empirical and 165 (56.7%) are descriptive. In the immediate prior two reviews covering the periods 2006–2009 and 2003–2005, the proportion of empirical articles is 55% and 45%, respectively, down from the 2006–2009 review, but similar to the 2003–2005 time period. An analysis of 104 instructional cases appears in Appendix A.

For the first time in this series of literature reviews, with respect to empirical articles, the frequencies of (1) data collection method, (2) analysis method, and (3) geographic location of sample by content area are tabulated. The purpose in providing this analysis is to identify and critique research design issues. Table 5 reports the frequencies for the 126 empirical articles included in the current review, and emphasizes that the empirical literature in this review relies heavily on non-experimental data-collection techniques and typically employs less rigorous data-analysis techniques.

Referring to Table 5 (Panel A), survey is the most common data-collection method (n = 69, 54.8%), followed by quasi-experimental (n = 23, 18.3%). For all content areas, these two data-collection methods are employed in over half of the articles reviewed. Only two of the 126 empirical studies employed an experimental design where both (1) randomization and (2) control and treatment groups are part of the study.

Table 5 (Panel B) reports that the most common data-analysis methods are tabulation (n = 48, 38.1%), differences in means (n = 29, 23.0%), and regression (n = 22, 17.5%). Empirical articles within the curriculum, assurance of learning (AOL), and instruction employ the more rigorous regression and analysis of variance (ANOVA) techniques in over half of those articles reviewed. Studies of faculty issues rely predominantly on tabulation as primary analysis method.

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4 The authors necessarily exercised judgment regarding the manner in which an article is summarized and classified. Errors are ours.

5 Tabulation refers to classification and summarization of data without statistical analysis.
In Table 5 (Panel C), the majority of the studies occur in the US and Canada (n = 66, 52.4%), with relatively fewer studies from Europe (n = 13, 10.3%) or Australia and New Zealand (n = 13, 10.3%). In all content areas, the plurality of articles is based on samples from the US and Canada. Accounting education research occurs at a global level. Geography no longer exists as a barrier to understanding how faculty teach and how students learn. In sum, the scholarship of teaching is without borders. Additional analysis of the 126 empirical articles reveals that 19 countries/territories are represented.

Reviews of the 291 empirical and descriptive articles are categorized into four sections corresponding to traditional lines of inquiry: (1) curriculum, AOL, and instruction; (2) educational technology; (3) faculty issues; and (4) students. A major section consists of subsections; empirical articles are reviewed first followed by descriptive, which are labeled as such. Section 6 offers suggestions for research in all areas, with specific suggestions for editors, administrators, and faculty.

2. Curriculum, AOL, and instruction

This section covers the following topics: general curricular issues, AOL, the 150-h curriculum, graduate programs, core competencies, and instructional approaches. Articles about eight specific content areas also are reviewed: (1) accounting information systems, (2) auditing and forensic accounting, (3)

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### Table 1
Accounting education literature review series and journals reviewed.

<table>
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<tr>
<th>Time period</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 1985</td>
<td>1. Rebele and Tiller (1986)</td>
</tr>
<tr>
<td></td>
<td>4. Rebele et al. (1998b)</td>
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</tbody>
</table>

Panel B: Journals reviewed since 1991

<table>
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<tbody>
<tr>
<td>Accounting Education: An</td>
<td></td>
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<td></td>
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<td></td>
<td>2010–2012</td>
</tr>
<tr>
<td>International Journal</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>2010–2012</td>
</tr>
<tr>
<td>Advances in Accounting</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2010–2012</td>
</tr>
<tr>
<td>Education</td>
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<td></td>
<td></td>
<td></td>
<td>2010–2012</td>
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<tr>
<td>Global Perspectives on</td>
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<td></td>
<td></td>
<td></td>
<td>2010–2012</td>
</tr>
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<td>Accounting Education</td>
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<td></td>
<td></td>
<td></td>
<td>2010–2012</td>
</tr>
<tr>
<td>Issues in Accounting Education</td>
<td></td>
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<td>2010–2012</td>
</tr>
<tr>
<td>The Accounting Educators’</td>
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<td></td>
<td></td>
<td></td>
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<td>2010–2012</td>
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<tr>
<td>Journal</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2010–2012</td>
</tr>
</tbody>
</table>

a. Accounting Perspectives is included in the 1991–1997 review, but is excluded thereafter because after 1997 its focus shifted away from education-related articles.
b. Only US-based journals are reviewed prior to 1997.
e. No issues published.
g. Included in the 2006–2009 review.

In Table 5 (Panel C), the majority of the studies occur in the US and Canada (n = 66, 52.4%), with relatively fewer studies from Europe (n = 13, 10.3%) or Australia and New Zealand (n = 13, 10.3%). In all content areas, the plurality of articles is based on samples from the US and Canada. Accounting education research occurs at a global level. Geography no longer exists as a barrier to understanding how faculty teach and how students learn. In sum, the scholarship of teaching is without borders. Additional analysis of the 126 empirical articles reveals that 19 countries/territories are represented.

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6 Prior to Apostolou, Hassell, Rebele, and Watson (2010) assurance of learning (AOL) is referenced in a separate section as assessment.

7 Rather than reporting p-values in the narrative we adopt the convention of referring to findings as statistically significant when p ≤ 0.05.
ethics and professional responsibility, (4) financial accounting other than IFRS, (5) IFRS, (6) managerial accounting, (7) taxation, and (8) historical perspective. More articles appear within this topical area than any of the others, with 53 empirical articles and 119 descriptive articles published during this period (59.1% of all empirical and descriptive articles).

During 2010–2012 a significant volume of articles on the topic of IFRS was published. Accounting Education: An International Journal and Advances in Accounting Education dedicated issues to the topic in 2011 and 2012, respectively. As a result, the current review has a new, separate Section 2.7.5 for IFRS. No articles appear on the topic of governmental or nonprofit accounting, and scant work appears in managerial, taxation, and historical perspective. However, managerial accounting students are often used as survey respondents. The primary context within which curricula is examined is financial accounting. Consistent with the previous literature reviews, core competencies and group learning continue to be emphasized.

2.1. Curricular issues

Palm and Bisman (2010) reviewed introductory accounting course content at a sample of Australian universities (n = 21, 55% response rate) and created five benchmarks for evaluating an accounting curriculum: (1) subject orientation (user vs. preparer); (2) learning objectives and content (conceptual vs. procedural); (3) teaching and learning strategies (facilitator vs. instructor); (4) assessment (innovative or conventional); and (5) alignment (or not) of learning objectives, activities, and assessment. Details regarding practices in the participating universities are provided for.

Elder, Seaton, and Swinney (2010) studied the association between class size and disruptive behavior. The responding faculty (n = 330, 18.3% response rate) represent all professorial ranks from all schools listed in Hasselback’s Accounting Faculty Directory (2002). Conclusions are that large classes are more likely to foster incivility than small classes; similar results are obtained for schools located in large communities and for larger academic institutions. Suggestions are made for faculty teaching in large classes, institutions, and communities to address how student anonymity can be managed to reduce incivility.

Stout and Wygal (2010) surveyed award-winning accounting educators about avoiding pitfalls in the classroom. The sample (n = 105) was based on a solicitation to accounting program leaders listed

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Table 2
Summary of common abbreviations.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>American Accounting Association</td>
</tr>
<tr>
<td>AACSB</td>
<td>The Association to Advance Collegiate Schools of Business</td>
</tr>
<tr>
<td>AECC</td>
<td>Accounting Education Change Commission</td>
</tr>
<tr>
<td>AECPA</td>
<td>American Institute of Certified Public Accountants</td>
</tr>
<tr>
<td>AIS</td>
<td>Accounting information systems</td>
</tr>
<tr>
<td>CPE</td>
<td>Continuing Professional Education</td>
</tr>
<tr>
<td>DIT</td>
<td>Defining Issues Test</td>
</tr>
<tr>
<td>FASB</td>
<td>Financial Accounting Standards Board</td>
</tr>
<tr>
<td>GAAP</td>
<td>Generally accepted accounting principles (US)</td>
</tr>
<tr>
<td>IFAC</td>
<td>International Federation of Accountants</td>
</tr>
<tr>
<td>IFRS</td>
<td>International financial reporting standards</td>
</tr>
<tr>
<td>SEC</td>
<td>US Securities and Exchange Commission</td>
</tr>
<tr>
<td>SOX</td>
<td>The Sarbanes–Oxley Act of 2002 (US Public Law 107-204)</td>
</tr>
<tr>
<td>VITA</td>
<td>Volunteer Income Tax Assistance</td>
</tr>
<tr>
<td>XBRL</td>
<td>eXtensible Business Reporting Language</td>
</tr>
</tbody>
</table>

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8 The Journal of Accounting Education devotes an issue to governmental and not-for-profit education in 2013 (Volume 13, Issue 3).
in Hasselback’s *Accounting Faculty Directory (2009)*, with the goal of learning from exemplars (the average number of teaching awards per participant is 3.79). Content analysis was used to categorize responses into five pitfall categories: (1) negative or uncaring attitudes about students and the class; (2) improper course preparation/organization; (3) faulty or deficient course-delivery skills; (4) testing or assessment mistakes; and (5) inflexible or inaccessible demeanor. The details reported within each of these categories provide a guide to educators to reflect upon their teaching effectiveness.

**Duchac and Amoruso (2012)** studied the characteristics of introductory accounting courses, based on a survey of students (n = 241, 26% response rate) at 4-year colleges and universities (US private institutions = 140; US public institutions = 101). Data were collected on seven different dimensions: (1) course size and staffing, (2) pedagogical orientation, (3) standardization of course elements, (4) textbook selection process, (5) use of technology in course management, (6) off-site delivery, and (7) policies dealing with credit transfer.

**Munter and Reckers (2010)** report the results of a 2009 survey conducted by KPMG and the Education Committee of the AAA on the current state of accounting education. In summarizing the survey results (n = 500 accounting educators), they suggest that faculty time-intensive pedagogical challenges surrounding ethics, fair value accounting, and IFRS necessitate modifications at the curricular level rather than the course level.

### 2.1.1. Descriptive articles

**Tegarden, Sheetz, and Henderson (2010)** describe a strategic planning exercise conducted at a research university in the US for AACSB maintenance-of-accreditation purposes. A causal mapping approach identifies the important issues. The planning process is described in detail and would be a useful model for accounting departments interested in a sophisticated strategic planning exercise.

**Montague (2012)** discusses the benefits and limitations of agreements between educational institutions regarding the transfer of academic credits. Best practices are demonstrated in the context of a case study.

**Debreceny and Farewell (2010)** present a position paper outlining the arguments for including XBRL as an integrated topic throughout the accounting curriculum. **Simon (2010)** demonstrates how to use concept mapping to revise a curriculum in the context of a financial accounting theory component in a UK university. **De Lange and Watty (2011)** describe current challenges facing
Australian universities, which include funding shortages and reduced international student demand resulting from stricter immigration laws.

Black (2012) summarizes the activities of the Pathways Commission, which is a joint project of the AAA and the AICPA9 created to reflect upon the historical underpinnings of the evolution of the accounting profession as it affects educators and practitioners. Behn et al. (2012) summarize the seven primary recommendations from the Pathways Commission.

Fogarty (2010b) writes about the benefits of integrating the tenets of a liberal arts education into accounting curricula. Willits (2010) analyzes the purported failure of general education programs to fulfill the desired benefits of a liberal education (e.g., critical thinking, broad cultural understanding, problem solving ability, communication skills), and offers strategies for accounting educators to incorporate those benefits within accounting curricula.

Daugherty, Dickins, and Fennema (2012) describe how US accounting firms employ individuals in other countries (notably India) to perform basic tax, bookkeeping, and audit work for US-based clients. The implications of this growing phenomenon for accounting professors include the following: (1) entry-level accountants in the US will encounter more complex tasks earlier in their careers; (2) complex technology is required to manage international engagement teams; and (3) accountants should be educated in cultural differences as preparation to work on diverse teams.

2.2. Assurance of learning (AOL)

Curtis (2011) addresses the dearth of research in the area of formative assessment (FA) in accounting education. The traditional classroom engages in summative assessment (e.g., a letter grade on sub-

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Table 4
Journals and article type by topic.

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic/area</th>
<th>JAEd</th>
<th>AAE</th>
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<th>IAE</th>
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JAEd, Journal of Accounting Education; AAE, Advances in Accounting Education; AE, Accounting Education: An International Journal; AEJ, Accounting Educators’ Journal; GPAE, Global Perspectives on Accounting Education; IAE, Issues in Accounting Education. *Instructional cases are summarized by topic in Appendix A. Non-case instructional resources are classified as descriptive.

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9 In 2008, the US Department of Treasury’s Advisory Committee on the Auditing Profession recommended that the AAA and AICPA investigate the future of accounting (http://www.treasury.gov/about/organizational-structure/offices/Pages/acap-index.aspx).
mitted work), while FA emphasizes feedback intended to ensure learning. The article includes three key elements: (1) a conceptual discussion of FA; (2) a meta-analysis of assessment research; and (3) a report of a study of FA efficacy in introductory accounting. The study includes two FA assignments for volunteer students ($n = 246$) enrolled in one section at a major public US university, and students are randomly assigned to two of four conditions (each student completes two assessment tasks, although only two of the four are FA, randomly assigned). Differences in performance scores among the four conditions are empirically tested. FA is shown to be effective at identifying learning deficiencies, which permits remediation.

Pacharn, Bay, and Felton (2012) developed and evaluated at a Canadian university a flexible assessment system for use in intermediate accounting. The model permits students to choose the weights of class participation (0–15%), assignments (0–10%), mid-term exam (0–35%), and final exam (0–75%) in terms of their course grade. Students select a formal assessment plan at the outset, which plan can be adjusted prior to the final exam—after they know scores on the prior assessments. The model was tested in seven different sections of intermediate accounting over a period of 3 years and two different instructors ($n = 290$ students). Students who selected the model to frontload effort on early assessments outperformed other students. A “gambling strategy,” in which the student chooses to defer effort to the final exam, produced less favorable results.

Simkin, Keuchler, Savage, and Stiver (2011) investigated whether multiple-choice (MC) questions are as effective at measuring understanding as are constructed-response questions. The sample consisted of student test scores in 10 accounting courses over four semesters at two US universities ($n = 448$). The courses studied include introductory financial accounting, accounting information systems, and intermediate financial accounting. The question formats were identical in all cases, with MC questions appearing before constructed-response questions. Regression analysis suggests that a

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<td>Total</td>
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<td>53</td>
<td>17</td>
<td>24</td>
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**Panel A. Data-collection method**

<table>
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<tr>
<th>Survey</th>
<th>Quasi-experiment</th>
<th>Published source</th>
<th>Student or course performance</th>
<th>Interview</th>
<th>Experiment</th>
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<tr>
<td>69</td>
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<td>15</td>
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**Panel B. Analysis method**

<table>
<thead>
<tr>
<th>Tabulation</th>
<th>Differences in means</th>
<th>Regression</th>
<th>Analysis of variance</th>
<th>Path analysis</th>
<th>Other empirical methods</th>
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<td>7</td>
<td>2</td>
<td>126</td>
</tr>
</tbody>
</table>

**Panel C. Geographic location of sample**

<table>
<thead>
<tr>
<th>US and Canada</th>
<th>Europe</th>
<th>Australia and New Zealand</th>
<th>Asia and Africa</th>
<th>Multinational</th>
<th>Unreported*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>13</td>
<td>13</td>
<td>7</td>
<td>3</td>
<td>24</td>
<td>126</td>
</tr>
</tbody>
</table>

*Most of the authors of unreported geographic locations are from US institutions.
significant positive relationship exists between MC test scores and constructed-response test scores. Results of additional analysis suggest that MC questions may not test applicants at the same cognitive level as constructed response questions. The authors conclude that all professional certification groups consider using both MC and constructed-response questions in designing professional licensure exams to ensure that technical understanding is fully and appropriately measured.

2.2.1. Descriptive articles

DeBerg and Chapman (2012) describe an AOL program at a large US university, based on the use of direct measures in an introductory financial accounting course. A description of how the AOL measures are used to improve learning outcomes and teaching strategies is included, which is helpful for faculty implementing similar programs to meet AACSB accreditation standards. Freeman and Hancock (2011) describe changes in the Australian higher education climate, which emphasizes continuous improvement and AOL.

2.3. The 150-h curriculum

Allen and Woodland (2012) respond to Gramling and Rosman (2009), who challenge findings in Allen and Woodland (2006) regarding the impact of the 150-h education requirement on both the number of CPA exam candidates and pass rates for the period 1991–2002. In this rejoinder, the analysis from the two earlier articles is compared to show that Gramling and Rosman (2009) focus on how the 150-h requirement is implemented, which is not directly comparable to Allen and Woodland (2006).

Briggs and He (2012) compared the pass rate of CPA candidates from jurisdictions with the 150-h requirement and those without. Fifty-four jurisdictions were examined over the period 2004–2007. Higher pass rates for all four parts of the CPA exam were observed in 150-h jurisdictions, but the difference is significant only for the Auditing/Attestation and Regulation sections. Over the study period these results obtained for both overall pass rates and first-time candidate pass rates.

2.4. Graduate accounting programs

Frecka and Reckers (2010) summarize the results of a 2009 survey concerning the favorable and unfavorable aspects of Master of Accountancy (MA) programs at two US universities, one public and one private. Recent graduates of the programs currently employed as auditors (n = 518) at five large public accounting firms comment on the alignment between the coverage of a topic in their academic experience relative to the importance and usefulness to a career as a practicing auditor. The top three technical topics that should be covered (as ranked by the respondents) are (1) financial accounting, (2) advanced auditing, and (3) risk analysis and assessment of internal control; the three least important are tax topics. The top three skills that should be emphasized in MA programs are (1) critical thinking, (2) written communication, and (3) oral communication. Additional analysis based on alumni feedback is included to assist faculty considering how to script an MA program to satisfy entry-level requirements in auditing and assurance services.

Taylor and Finley (2011) describe the efforts of a US university to internationalize its Master of Accounting (MACC) curriculum by requiring an international travel course. Survey responses of MACC students who had already completed an optional travel course (n = 145, 69% response rate) show that the travel experience is perceived as providing a broader global perspective on 17 dimensions (e.g., broad global issues, cultural complexities, understanding global clients, economic and political interaction). Recommendations for a formal AOL plan for international travel courses are provided.

Brucker and Hetherington (2011) developed benchmark characteristics of Master of Science in Taxation (MST) programs in the US based on survey responses (n = 26, 43% response rate) from graduate tax program directors. A summary of nine essential MST program characteristics is presented: (1) student recruitment and admission requirements; (2) enrollment; (3) financial support, internships, and career placement; (4) course delivery and curriculum; (5) challenges in meeting AACSB accreditation requirements; (6) faculty credentials; (7) recruitment and compensation of part-time faculty; (8) significant accomplished and planned program changes; and (9) online course delivery.
Grace and Black (2011) revisited the usefulness of GMAT and undergraduate GPA scores in predicting (1) academic performance at the graduate-level and (2) the likelihood of employment in public accounting. GMAT scores and undergraduate GPA were collected for US (n = 106) and international (n = 78) students enrolled in an accelerated-cohort Masters of Accountancy (MA) program in the US for the period 2002–2009. Variability in academic performance in the MA program was partially explained by GMAT and undergraduate GPA, but primarily for US students. English language ability was the key determinant of academic performance at the graduate level for international students. Graduate GPA was significant for job placement, but only for international students.

Belghitar and Belghitar (2010) surveyed students enrolled in an MSc in Finance degree at a British university to (1) understand their dissertation experience10 and (2) identify ways to better prepare those students to engage in research. A survey was administered to a cohort of students (n = 33) to gauge their perceptions of the research elements of the degree. This qualitative study reveals that students value the dissertation experience even when they possess novice research skills at the outset. Survey responses indicate that the following three interventions were viewed positively: (1) guest speakers, (2) student presentations, and (3) lab sessions to hone statistical skills.

Fogarty and Holder (2012) analyze and discuss the decline in US accounting doctoral student production for the period 1989–2008. The analysis considers the (1) uniformity of the decline among institutions, (2) role of a program’s prestige, (3) association with MBA program rankings, (4) program size, (5) public funding, and (6) prognosis for the future. The data were derived from Hasselback’s Accounting Faculty Directory (2005, 2010, 2011), with 5-year moving averages used to detect trends. Significant declines in doctoral production occurred in middle prestige schools, larger universities, and public institutions; the decline was not uniform across all institution types. Institutions with ranked MBA programs are more likely to have experienced a decline in the number of accounting doctoral students, suggesting a shift in institutional mission. Details are presented by doctoral-granting institution, which is useful for informing the discussion about the decline and ways it may be remedied.

2.4.1. Descriptive articles

Beyer, Herrmann, Meek, and Rapley (2010) outline a career guide for accounting doctoral students that serves as a resource that can be used to navigate the academy. Entwistle (2011) describes curriculum development where academic research is successfully integrated into a large, professionally oriented master’s course. Baldwin, Brown, and Trinkle (2010) suggest that doctoral programs be evaluated on four metrics: (1) number of women and minority graduates, (2) graduate placement, by Carnegie classification, (3) AACSB accreditation, and (4) the highest degree awarded by the employing institution. Hazelton and Haigh (2010) discuss two graduate-level class projects that incorporate the overarching topic of sustainability into an accounting curriculum.

2.5. Core competencies

Thibodeau, Levy, and Osterheld (2012) propose a supplementary program in an introductory accounting course that emphasizes ethical issues in accounting. The course involves role play and interaction with practitioners to reinforce business, professional, and personal competencies. A survey of participating students (n = 343, 45% response rate, locale not reported) indicates that the supplementary program is perceived as beneficial in terms of gaining a better understanding of key accounting concepts and competencies, including ethical issues. Recommendations for implementation are provided.

Crawford, Helliar, and Monk (2011) surveyed the skills that UK accounting professionals (n = 321, 16.2% response rate) and academicians (n = 190, 40% response rate) perceive to be essential for accounting students. They identify 16 skills, which are validated against the Quality Assurance Agency (QAA)11 accounting benchmark. Academicians rated analytical and communication skills as the most

10 Typically referred to as a thesis at US institutions.
11 http://www.qaa.ac.uk/Pages/default.aspx.
important skills for students; professionals rated analytical skills as the most important. The professionals rated presentation skills higher than did the academic respondents. The relative ranking of the 16 skills is provided for all groups surveyed.

Bui and Porter (2010) researched the gap in the competencies that employers of accounting graduates expect and what graduates actually possess. All syllabi at one New Zealand University were evaluated to identify learning objectives for each course and for the completed curriculum. Semi-structured interviews with recruiters (n = 11), alumni (n = 5), accounting lecturers (n = 6), and undergraduate seniors (n = 8) were analyzed with structural data displays. The qualitative results suggest that a gap exists between expected and possessed competencies. An appeal for universities to raise the importance of teaching effectiveness in promotion and tenure decisions is made as a way of encouraging improved teaching of the competencies.

Keneley and Jackling (2011) surveyed Australian accounting students about their perceptions of skill-attainment in the accounting curriculum; they examined whether those perceptions vary in different cultural cohorts. The 11 skills addressed are teamwork, decision making, problem solving, adapting knowledge to new situations, working with supervisions, ethics and social/cultural implications of decisions, questioning of accepted wisdom, being open to new ideas, logic, creativity, and responsibility. Based on a five-point scale (1 = no contribution; 5 = great contribution) students (n = 437, response rate not reported) were asked the extent to which their accounting studies contributed to these 11 skills When the respondents are divided into local and international cohorts, significant differences were found using ANOVA in five of the 11 areas: (1) logic, (2) questioning of accepted wisdom, (3) teamwork, (4) creativity, and (5) responsibility.

Fortin and Legault (2010) describe the award-winning mixed-teaching approach at The L’Université du Québec à Trois-Rivières in Canada, which is designed to prepare students for professional competencies and the Chartered Accountant designation. To measure whether the competencies are being achieved, a cohort of students in September 2006 (n = 33, 97% response rate) was asked to complete a 32-question survey. The results of factor analysis and tests of mean differences show that the mixed-teaching approach is useful in developing all 32 competencies. The conclusion is that faculty should explore teaching methods beyond the traditional lecture.

Milliron (2012) surveyed CPAs (n = 30) attending a California of Society of CPAs meeting in 2008 to obtain their perceptions of gaps in core competency development during the undergraduate degree. Findings include the need to continue to emphasize communication and analytical thinking as the primary skills, which are perceived to be even more important than technical accounting knowledge. A balanced academic program is preferred to a focus on accounting-only courses, and a strong emphasis on quality of courses (vs. quantity) is noted. The findings were affirmed with focus group sessions conducted with young accounting professionals (n = 85).

2.5.1. Descriptive articles

Young and Warren (2011) present an approach to develop critical thinking skills in the introductory accounting courses using “Challenge Problems,” which are designed to test basic accounting concepts as applied to a common business issue. The approach requires that the instructor explicitly acknowledge the importance of critical thinking, which encourages the student to prioritize it as a learning goal. The problems are included in an appendix for those interested in employing the approach.

McPeak, Pincus, and Sundem (2012) describe the International Accounting Education Standards Board (IAESB) and its pronouncements, Accounting Education Standards (IESs), which are enforced through IFAC. They encourage educators and practitioner to engage in the evolution of international accounting education standards, with special emphasis on cultural and legal differences that exist.

Chevis, Davis, and Hurtt (2011) describe a program called “Backpack to Briefcase” developed for a US university accounting curriculum that emphasizes professionalism (e.g., communication, teamwork, research, time management) to facilitate the move from student to workplace. The program consists of a sequence of co-curricular experiences from the beginning of introductory accounting through graduate courses. Success of the program is measured by an increase in internships, campus recruitment activities, student placement. Details of how to operationalize the program are provided.
Ahlawat, Miller, and Shahid (2011) document the creation and implementation of a research-intensive accounting capstone course with a writing emphasis. Three primary goals of the course are as follows: (1) interpret accounting information, (2) conduct research, and (3) communicate results. The writing component requires three substantial writing assignments for each individual student, graded with rubrics. Craig and McKinney (2010) describe and test a semester-long writing-development strategy for intermediate financial accounting students. The approach involved the use of weekly interventions during the semester that used 1 h per week of class time. Materials are included to assist faculty interested in developing a writing component in an accounting course.

Willcoxson, Wynder, and Laing (2010) describe a strategy used by a university in Australia to ensure that generic and professional skills are incorporated throughout the curriculum in. Individual courses are mapped to the skills covered, and then all the courses are mapped to the curriculum to ensure appropriate coverage. Stoner and Milner (2010) describe a project, in small sections of a first-year accounting course at a UK university, which can be used to develop employability skills.

Bloch, Brewer, and Stout (2012) describe a classroom-tested module to assist in developing the core competency of leadership in any upper-level undergraduate course. The premise of the module, which consists of six lesson plans, is to encourage students to view themselves as future leaders. Comprehensive materials are presented (e.g., cases, assignments, presentations, discussion questions) to facilitate implementation of the module.

Daff, De Lange, and Jackling (2012) compare and contrast a generic-skills framework to an emotional intelligence (EI) framework for accounting education, and suggest that faculty develop curricula that address the latter. Generic skills include written communication, analytical ability, lifelong learning techniques, and creative thinking. EI incorporates adaptability, self-awareness/confidence, empathy, and ability to collaborate effectively, which (according to the authors) employers are increasingly emphasizing. Suggestions for faculty to (1) plan EI for the curriculum, and (2) address its use in research are presented.

Matherly and Burney (2010) present a project-driven strategy to assist students in developing personal competencies necessary for successful accounting careers. They provide a framework for identifying appropriate projects based on task content and offer tools for streamlining student assessment. Baker (2011) offers an approach to teaching introductory financial accounting that incorporates broad competencies in addition to content knowledge. The approach is demonstrated with a general framework, a reflection process, and a course-design matrix, which may be useful to those interested in promoting deeper learning.

Jones (2010) conducted a qualitative study regarding the generic attributes and skills essential for accounting graduates by considering attributes in five non-accounting disciplines: (1) history, (2) physics, (3) economics, (4) law, and (5) medicine. A detailed discussion of the interdisciplinary literature is helpful to academicians emphasizing skills and attributes in their courses and curricula.

Krom and Williams (2011) demonstrate how accounting educators can use creative writing to enhance and assess student learning. Three contexts are described and examples with grading rubrics are presented: (1) storytelling, (2) fairy tales, and (3) poetry. Lister (2010a) writes an essay about the benefits of requiring literature in accounting courses, which permits students to reflect upon culture and imagination. Specific examples of poems and writings are provided to support the thesis and assist educators who would like to adopt the ideas. The following offer comments: Berg (2010), Craig (2010), Evans and Fraser (2010), Howieson (2010), Jelly (2010), Laswad (2010), Nabil (2010), Phillips (2010), Sangster (2010), Saville (2010), and Scott (2010). Lister (2010b) responds to the comments.

2.6. Instructional approaches

2.6.1. Group learning, service learning, and internships

Lehmann, Heagy, and Willson (2011) present evidence that students who work in established groups outperform those in ad hoc groups. Study participants were (1) AIS professionals, and (2) students enrolled in a graduate AIS course in the US. The sample (n = 92) was divided into four groups: (1) ad hoc novice (n = 19); (2) ad hoc experienced (n = 28); (3) established novice (n = 28); and (4) established experienced (n = 17). A task involving a series of unstructured and open-ended cases (included in an appendix) was used; MANOVA results indicate that novices working in established groups over a
4-month period outperformed those in ad hoc groups. The evidence indicates that students can improve their problem-solving ability by practicing cases in groups that reflect realistic (i.e., unstructured) problems.

Shankar and Seow (2010) studied the association between student “lone-wolf tendencies” and perceptions of the value of team activities. A lone-wolf tendency describes an individual who is distrustful of others, prefers to work alone, and lacks confidence and patience. Students enrolled in a senior-level course at a university in Singapore (n = 170) completed a questionnaire administered in two parts: (1) a pre-project assessment of lone-wolf tendencies, and (2) a post-project survey consisting of four parts. Results show that students valued the teamwork experience, but that those with lone-wolf tendencies tended to perceive fewer benefits. However, the assigned grades for the lone-wolf students were not significantly different from those of the team-oriented students. Faculty can facilitate lone-wolf engagement by working to develop positive attitudes about teamwork to permit their positive traits to emerge for the benefit of the team.

Chen, Jones, and Moreland (2010) investigated the (1) effectiveness, and (2) student perceptions of group dynamics in online and traditional classrooms of intermediate cost accounting. Data were collected over a 3-year period from the both online (n = 75) and traditional (n = 64) students at a US university in classes taught by the same instructor who was experienced at both delivery methods. The survey consisted of 20 questions (five-point scale, where 1 = strongly disagree and 5 = strongly agree); data were analyzed using ANOVA. The primary conclusions are as follows: (1) group work was perceived as more effective in a traditional class, (2) a group size of four students is appropriate, and (3) online students perceive an imbalance of effort in group assignments. Suggestions for faculty to manage group dynamics are provided.

Christensen, Schmidt, and Wisner (2010) investigated the impact of a VITA service-learning experience on development of student confidence in terms of the following: (1) practical skills, (2) interpersonal skills, (3) citizenship, (4) personal responsibility, (5) problem solving, and (6) school pride. The pretest sample consisted of VITA students (n = 138) and non-VITA control group of students (n = 112) from eight US universities conducted via online survey (response rate not provided). The posttest sample consisted of 137 VITA students and 82 non-VITA students. The analysis (difference in means, tested using both a MANOVA and a MANCOVA model) reveals that VITA students were more confident than the control group of students in terms of practical skills, citizenship, and personal responsibility; thus the authors indicate that VITA programs are an important curricular component for skill and attribute development purposes.

Opdecam and Everaert (2012) used a quasi-experimental design to study the impact of team learning vs. a traditional lecture format. Freshmen financial accounting students at one university in Belgium (n = 353, 67.7% response rate; n = 117 in the experimental condition) were the participants. The study occurred over one 16-week semester. Those in the control group were taught in the traditional lecture format, while the experimental condition consisted of team learning, discussions, required attendance, interaction with peers and faculty, and required homework. The study revealed three phenomena: (1) team learners were more satisfied than those in the traditional lecture class; (2) team learners reported a more positive course experience; and (3) team learners invested more time on the course material. The results show that team learning is an effective way to teach introductory accounting students.

2.6.1.1. Descriptive articles. DeLaune, Rakow, and Rakow (2010) describe a service-learning project in which teams of Beta Alpha Psi members conducted financial literacy presentations in several venues to a total of 490 students. Tonge and Willett (2012) describe a team-based service-learning project for auditing students in a charitable organization in the UK. Students completed a financial systems audit or review for a large local charity, with an emphasis on technical application of skills and the core competencies of communication, teamwork, and professional responsibility. Zamora (2012) describes how faculty can engage with a social enterprise partner to incorporate service learning in an introductory management accounting course. An outline with sufficient details to develop an implementation plan is included.

Killian, Huber, and Brandon (2012) present an active-learning technique for the first accounting course, designed to introduce students to a professional perspective. Students interview an accounting
professional who uses external financial statements in his or her work, providing students with a realistic experience on which to reflect in class. Stanley and Marsden (2012) describe the implementation of problem-based learning as applied in the capstone accountancy course at one university in Australia.

Hilton and Phillips (2010) consider whether student group dynamics differ between instructor- and student-selected project team assignments from the student’s perspective. The context is one introductory financial accounting course at a Canadian university. Student-selected groups in this study exhibited a faster project start and higher confidence in work product. Gracia (2010) describes a program of voluntary, supervised work experience for second-year business students at a UK business school designed to enhance transfer of learning from the classroom to the workplace.

2.6.2. Case studies—descriptive articles

Doran, Healy, McCutcheon, and O’Callaghan (2011) describe the use of case studies in large accounting and finance classes at one Irish university. Three scenarios were used: (1) a case study requiring a debate, (2) a case study of a board meeting format, and (3) a so-called family council format in which students form groups to solve issues related to a family business. The benefits and potential barriers to success in using cases in large classes are discussed. Healy and McCutcheon (2010) explain how accounting faculty employ case studies at one Irish university using three common teaching approaches: (1) controller (faculty directs students to a prescribed conclusion), (2) facilitator (faculty guides the student to a logical conclusion), and (3) partner (faculty participates with the student as an equal in developing a solution).

2.6.3. Other instructional approaches

Mundy (2012) describes an initiative to encourage students in a finance module required as part of an undergraduate degree program in Britain to complete homework (n = 71–84, depending upon the week). The module lasts for 12 weeks, and no grade reward is offered for completing the homework. The initiative involves emphasizing and complimenting students who attended the class with the homework prepared (e.g., those not completing the homework were compelled to sit in the rear of the room and work on their own). The proportion of students completing the homework increased from a low of 20.2% in week 3 to a high of 63.9% in week 12. Some difficulties were encountered with segregating the students in class (e.g., a few of the homework completers were reluctant to sit in front) and concerns about a fall in attendance exist (i.e., 12% from first to last day of the tutorial). While the initiative increased commitment to homework completion, it may have unintended consequences associated with offending those who prefer a more passive learning environment.

Meyer and Bagwell (2012) studied the relationship between exam paper color and exam performance. Using eight different colors in 10 academic quarters (n = 1372 final exams) in a coordinated introductory managerial accounting course at a major US university showed that paper color had no significant association with exam performance. ANOVA and ANCOVA were used to analyze the data (exam scores and demographic features). In addition, a survey of introductory accounting course coordinators at AACSB-accredited schools in the US (n = 108) revealed that 36.6% use colored paper routinely. A similar survey of non-US universities (n = 18 in eight different countries) showed that the use of colored paper in exam settings is atypical.

Dallimore, Hertenstein, and Platt (2010) studied the relationship between class participation and learning in a pre- and post-course survey of sophomore business majors enrolled in accounting courses (n = 323, 50% response rate) at a single US university. Path analysis was used to analyze two dependent variables: (1) self-reported comfort with class participation, and (2) course grades. Findings suggest that students comfortable with class participation tend to master the material more efficiently than those reporting discomfort. Techniques for promoting participation are offered with the idea that involuntary participation will promote comfort, which in turn will improve learning.

Leauby, Szabat, and Maas (2010) explored whether concept mapping in introductory financial accounting enhances student learning when added to traditional pedagogies. Freshmen undergraduate business students enrolled in introductory financial accounting at a US university were split into control (n = 37) and experimental (n = 43) groups in a quasi-experiment. Students were enrolled in two identically presented courses, except that the treatment group learned how to construct concept
maps. No difference in examination scores between the two groups was found; however, students in the treatment group reported perceived benefits from learning how to prepare concept maps.

Elikai and Schuhmann (2010) studied stricter grading policy as a way to motivate student achievement. A quasi-experiment was conducted over two different semesters in 2004 with treatment (n = 95) and control groups (n = 91). With the exception of the grading strategy classroom pedagogy was the same for both groups. The results show that higher grading standards were associated with improved student performance, as measured by course grade.

Arthur and Everaert (2012) investigated the issue of whether gender affects performance on alternative test formats [multiple-choice (MC) or constructed-response questions]. Student participants were enrolled in an undergraduate financial accounting course at a Belgian university during 2008–2009 (n = 455, 40% female): a parallel study was conducted on a sample of master’s students (n = 111, 38% female). ANCOVA results indicate that females outperformed males in both test formats. However, males performed better with an MC format than with a constructed-response format. The authors suggest that faculty include both types of assessments to address the gender effect, recognizing that efforts to make the constructed-response questions grader-friendly can ease grading burdens.

Marriott, Telford, Davies, and Evans (2011) studied whether work-based or examination-based learning is better preparation for a career as an auditor. The research method was an online survey administered to a sample of audit trainees and recently qualified accountants in the UK (n = 438, response rate not reported). The authors found that work-based experience was superior to examination-based learning, leading to the suggestion that, as a way to facilitate learning, educators should use unstructured learning approaches to imitate the work environment.

2.6.3.1. Descriptive articles. Cunningham (2011) suggests that large-lecture introductory accounting classes are analogous to a theatrical production and provides an approach for instructors in preparing for such lectures. Schwartz and Cherry (2012) describe a course that brings the reality of global business into the classroom; solicitation and preparation of speakers, grading, and student benefits are explained by the authors.

Mostyn (2012) describes cognitive load theory, which addresses how human learning occurs and how educators can optimize learning. The following topics regarding the application of cognitive load theory in the introductory accounting course are discussed by the author: (1) prioritizing content without the need to cover everything; (2) segmenting complex topics into manageable components; (3) minimizing extraneous details; and (4) employing more worked examples of the concepts.

Irving (2011) describes an active-learning approach for integrating research into any accounting course by including a requirement for the student to complete a research study using the scientific method. Resources to assist instructors interested in employing a similar approach are provided. McGowan (2012) describes a task in which student groups create a newsletter based on research of an intermediate accounting topic. Instructions for the newsletter assignment are included in appendix to the paper.

2.7. Specific content areas

2.7.1. Accounting information systems (AIS)

Boritz, Borthick, and Presslee (2012) assessed the effect of using diagrams as opposed to narratives when describing internal control processes. In a quasi-experiment, students (n = 139) in an upper-level undergraduate AIS course at a large US university were randomly assigned to one of two conditions. The first condition documents through textual information the internal control process, while the second condition uses a diagram to provide the information. Participants were presented with 24 multiple-choice questions, which were identical and in the same order for both groups. Five results are reported: (1) the method of representation was not associated with accuracy; (2) students in the textual representation group were more efficient and had a higher weighted-average performance than those in the diagram group; (3) academic achievement was associated with higher accuracy, lower efficiency, but not associated with weighted-average performance; (4) self-efficacy was not associated with accuracy or efficiency, but was negatively associated with weighted-average performance;
and (5) self-efficacy and academic achievement interact with representation and were associated with performance. The experimental instrument is provided.

2.7.1.1. Descriptive articles. Taylor and Dzuranin (2010) describe an interactive exercise designed to provide students with hands-on XBRL experience. Gomaa, Markelevich, and Shaw (2011) describe a project useful for introducing students to XBRL. The authors maintain that this project is appropriate for any financial accounting course.

Badua, Sharifi, and Watkins (2011) offer recommendations, including course content and format, for a second AIS course. Wessels (2010) describes an approach to encourage holistic learning instead of memorization with AIS used as the context. The techniques are in harmony with IFAC recommendations for a competency-based accounting curriculum.

Kotb and Roberts (2011) describe coverage of e-business content in undergraduate accounting programs in the UK and Ireland. The authors report that courses dedicated to e-business are far less common than in the US, and when available are optional. Fordham (2012) reports on how an actual fraud case may be used to achieve six learning objectives in an AIS course. The case is provided and the assignments from the case are discussed.

2.7.2. Auditing and forensic accounting

Carpenter, Durtschi, and Gaynor (2011) examined whether a forensic accounting course influences a student’s fraud-related judgments. The quasi-experimental design used students enrolled in a graduate-level forensic accounting course at one US university (n = 69; treatment = 37; control = 32) and a panel of forensic accounting experts (n = 7). Subsequent to training, student evaluation of fraud risk was significantly higher than before training (n = 36, 97% response rate); significantly higher than those students who had not received training (n = 32, 100% response rate); and not significantly different from fraud-risk assessments of experts (n = 7, 100% response rate). The improved evaluative capabilities were retained for at least 7 months following training (n = 17, 46% response rate). Implications are that fraud-specific training improves the evaluative capabilities to a level similar to that of experts, and that this effect persists, at least over the short term.

Sanchez, Agoglia, and Brown (2012) conducted a between-subjects quasi-experiment to test the effectiveness of an interactive professional learning experience in an audit course. Students from two universities participated (n = 100: treatment = 62, control = 38). Both groups were provided a lecture on evaluating the control environment and assessing fraud risk, and then were given a pretest to assess their skills and knowledge of the audit material. Subsequent to the pretest, a writing assignment was given to both groups. The writing assignment submitted from the treatment group was sent to an audit professional who then met with the student to discuss the written work. Both groups participated in a posttest assessment. Only the treatment group showed significant improvement in the posttest score over that of the pretest.

Based on a survey of New Zealand professional auditors (n = 130, 36.1% response rate), Chaffey, Van Peursem, and Low (2011) present evidence regarding the teaching practices, subjects and techniques that may be of value to future auditing professionals. The survey was organized into five sections covering (1) audit topics, (2) audit skills, (3) lecture experiences, (4) learning activities, and (5) disciplinary knowledge. Respondents indicated a preference for audit topics that require judgment, practical skills, and ethical judgment. The most preferred audit skill is the development of communication ability. The optimal lecture experience is that of a visiting lecturer in a face-to-face presentation format. Disciplinary knowledge in the areas of accounting and communication were ranked first and second, respectively.

2.7.2.1. Descriptive articles. Kaciuba (2012) describes an assignment for student groups to script and create a short movie (15–25 min) that captures an auditing topic with an emphasis on humor and entertainment value. Details about the assignment, grading, and connection to specific AICPA core competencies (e.g., professional demeanor, problem solving, leadership, communication) are provided for faculty interested in making a similar assignment. Drake (2011) describes how auditing instructors can use live cases (i.e., teach as events unfold), which is consistent with experiential learning theory; a template is presented to assist with this process. Kleinman and Anandarajan (2011) demonstrate the
use of a video in a forensic accounting or auditing course for demonstrating to students the concept and application of “inattentional blindness”.

Schwartz and Chandler (2012) demonstrate how SEC filings (Forms 10-Q and 10-K) can be used in an auditing course to reveal business risk through an analysis of seasonality. The specific example of Mattel is used to demonstrate the how risk and audit response can be taught. Weber, Erickson, and Stone (2011) describe an instructional resource intended as a supplement to the internal controls portion of an auditing course. Students read excerpts from selected Form 10-K and 10-Q reports where internal control weaknesses have been reported. They then respond to questions concerning the case to demonstrate an understanding of the internal control weaknesses and an evaluation of management’s response.

Hansen (2010) presents guidance for instructors in integrating SEC Accounting and Audit Enforcement Releases (AAERs) into an introductory or advanced auditing course. Students apply their knowledge in evaluating the action of individuals leading to issuance of the AAER, identify what auditor actions may have prevented the act, and present their analysis to the class. A sample project, grading rubric, and course schedule is provided.

Vasarhelyi, Teeter, and Krahel (2010) write a position paper on the future of audit education in the real-time economy; ways to integrate the changes in a traditional curriculum are offered. Dorminey, Fleming, Kranacher, and Riley (2012) discuss the foundations and subsequent developments of fraud theory. A meta-model of occupational fraud and a framework for presenting the information in a classroom setting is provided.

2.7.3. Ethics and professional responsibility

Ballantine and McCourt (2011) examined the impact of ethical orientation and gender on ethical judgments made by final-year undergraduate auditing students (n = 100; 55% female) in the UK. Students were administered the Ethics Position Questionnaire12 to assess two measures of ethical orientation: (1) idealism, and (2) relativism. Subsequently, students completed six audit scenarios to assess ethical judgments. In four of the six scenarios regression analysis revealed a positive association between ethical orientation (idealism) and ethical judgment. Ethical orientation (relativism) was not associated with ethical judgment in any of the six scenarios. The results did not differ by gender. The conclusion is that ethical orientation and gender are not influential factors in students’ ethical judgment and therefore may not be relevant to delivering ethics instruction.

Brown-Libur and Porco (2011) investigated the relationship between each of four extracurricular experiences and student cognitive moral development: (1) internships, (2) volunteerism, (3) Beta Alpha Psi membership, and (4) participation in student government. Two measures of cognitive moral development were obtained from students (n = 396, 82% response rate) at various US universities who completed the DIT-2. Regression analysis revealed that internships, volunteerism, and Beta Alpha Psi membership have a significant association with the ethical development to future accountants, but participation in student government does not. These results were similar for both measures of cognitive moral development, but significance level varied.

Razaee, Szendi, Elmore, and Zhang (2012) surveyed the perceptions held by academicians (n = 151, 30.2% response rate) and practitioners (n = 86, 17.2% response rate) regarding corporate governance and ethics (CGE) topics typically covered in business schools. The major topics were obtained through a content analysis of 36 syllabi from business schools in the US, UK, and Canada. Respondents provided their views on the (1) future demand of CGE, (2) methods of delivery of CGE content, (3) benefits and challenges of CGE coverage, and (4) the importance of CGE education. Overall, both respondent groups exhibited consensus on the importance of CGE education, but differed in regard to the relative importance of the specific topics. The authors provide recommendations for CGE course and curriculum development.

Graham (2012) surveyed and interviewed accounting and finance students at a UK university to assess the effectiveness of teaching ethics in undergraduate programs. The survey of students (n = 77, 51% response rate) in a second-year accounting class consisted of three questions and showed

12 http://donforsyth.wordpress.com/ethics/ethics-position-questionnaire/.
that students perceive that teaching ethics (1) is important, (2) is unlikely to alter an individual's views, and (3) should occur in a dedicated course. Interviews of students who participated in the original survey \((n = 5)\) were conducted just prior to beginning their third year. In the interview, only one student stated a preference for ethics content to be integrated across all courses. The other four students preferred a dedicated course.

Abdolmohammadi and Reinstein (2012) surveyed experienced practicing accountants \((n = 215)\) at nine accounting and auditing CPE sessions in 2008, two large CPA firms, and two groups of local practitioners in a midwestern state in the US. Participants in the CPE sessions were asked to voluntarily pick-up, complete, and submit the survey instrument, which included questions dealing with ethics course content and the influence of ethics training on attitudes and behaviors. Respondents favor covering professional codes of conduct in detail. They also agree that a proper ethics course would include philosophical theories, corporate codes of ethics, whistleblower protection, and records retention. Respondents agreed that ethics courses improve ethical behavior; however, ethics courses are viewed as only marginally effective in averting large corporate frauds.

Saat, Porter, and Woodbine (2012) investigated whether ethical interventions affect ethical judgments, as measured by the DIT. Accounting students from six Malaysian universities \((n = 113\) who completed the full longitudinal study, 33.2% response rate) in their final year of coursework participated. The chronology for the treatment group was as follows: (1) pre-intervention assessment of DIT, (2) an ethics course, (3) second DIT assessment, (4) practical training, and (5) final DIT assessment. The control group completed all three DIT assessments without participating in the two interventions. An ANOVA within-subjects procedure was used to isolate the treatment (intervention) effect on judgment-making ability. The DIT scores for the treatment group increased significantly from the second to the third assessment, suggesting that practical training intervention is associated with enhancing ethical judgments. Differences in the three DIT scores from the control group were not significantly different. The results suggest that socialization and interaction with the work environment appear to provide improvements in ethical judgment.

Thomas (2012) studied deliberative reasoning in ethical decision making. A multidimensional ethics scale and the DIT were used to measure levels of deliberative reasoning in first-year accounting students \((n = 42)\), first-year business students \((n = 106)\), and senior accounting students \((n = 70)\) at a Canadian university. The findings include (1) senior accounting students have higher deliberative reasoning than first-year accounting students; (2) no difference is detected in deliberative reasoning scores between first-year accounting and business students; (3) senior accounting students use post-conventional modes of deliberative reasoning more than first-year accounting students; and (4) senior accounting students make more ethical decisions than first-year accounting students. A conclusion for accounting educators is that ethics education should focus on post-conventional modes of deliberative reasoning (e.g., utilitarianism) rather than the conventions of relativism and egoism.

2.7.4. Financial accounting other than IFRS

Bloom and Webinger (2011a) investigate issues arising from the global financial crisis (GFC) in the two-course sequence of intermediate accounting implemented at John Carroll University in the US. Guidance on integrating GFC issues into the major topics in the intermediate I and intermediate II courses is provided. The broader discussions are intended to enrich the understanding of accounting
topics in the context of economic and financial events. Students ($n = 31$, 89% response rate) were surveyed regarding the value of the integrative approach. Responses indicate that the integrated approach is perceived to (1) enhance learning, (2) improve retention, (3) provide an understanding of the relationships among accounting, finance, and economics, and (4) be worth the additional time and effort required in the course. A timeline of the GFC and integrative exercises for troubled debt restructuring, a repo transaction, and margin call are provided. Adler (2011), Carnegie and West (2011), Galassi (2011), Marzo (2011), Phillips, Johnstone, and Mackintosh (2011), Tan (2011), and Woods (2011) each provide a commentary on Bloom and Webinger (2011a). Bloom and Webinger (2011b) respond to these comments.

Johnson and Slayter (2012) used a quasi-experiment to test cognitive load theory with a sample of students ($n = 88$) enrolled in an introductory financial accounting course at a major US university. All students received instruction from the same instructor and were randomly assigned into a conventional practice problem structure ($n = 44$) or a targeted practice problem structure ($n = 44$). Targeted practice problems set group assignments by transaction type and represent a lower cognitive load than the conventional practice problems. During the quasi-experiment, the lower cognitive load group analyzed transactions more accurately and in less time than did the higher cognitive load group (with significance). No significant difference on test scores between the two groups was observed after the experiment. However, on transactions requiring knowledge transfer, the lower cognitive load group performed better. Findings are consistent with cognitive load theory, yet are counter to current practice. The conclusion is that targeted practice problems increase learning efficiency and a student’s ability to apply existing knowledge to transaction types not previously practiced.

Burnett, Xu, and Kennedy (2010) studied the association between student self-efficacy and academic performance. In a survey conducted in the third week of the intermediate I course at a large US university, students ($n = 128$, 100% response rate) self-assessed two items: (1) skills relative to the accounting cycle, and (2) expected letter grade in the course. Results of regressions relating student self-assessment measures and an actual performance measure (i.e., grade on the first test) showed the following: (1) student self-evaluated knowledge of the accounting cycle was not related to performance, and (2) student perception about their ability to earn a grade was significantly related to actual performance. A framework for intermediate I curriculum reform is proposed that is centered on an early assessment of a student’s initial skill level and course-outcome expectations.

Phillips and Heiser (2011) conducted a 3 by 2 between-subjects quasi-experiment ($n = 259$, 67% response rate) to examine the efficacy of alternative ways of introducing students to the journalizing process in an introductory financial accounting course at a large US university. Accounting equation emphasis was varied in three conditions: (1) students were not required to provide the accounting equation effects when journalizing (none); (2) students were required to report the accounting equation effect before journalizing (before); and (3) students were required to report the accounting equation effect after journalizing (after). The scope of the introductory assignments was varied in two conditions: (1) journalizing assignment includes entries that affect the balance sheet and income statement (expanded); and (2) journalizing assignment only includes entries that affect the balance sheet (restricted). The dependent variable was journalizing accuracy. Students (randomly assigned) in the before and after groups demonstrated significantly higher journalizing accuracy than students not required to analyze the accounting equations effect (none group), with no discernible difference between the before and after groups. Journalizing accuracy for students in the restricted group was initially higher than it was for students in the expanded group. Both the restricted and expanded groups performed equally well 1 week later. Implications for instructors and future research are discussed.

Arya (2011) provides an alternative method of teaching the effective interest method. In contrast to the traditional method, which employs a discount or premium account to deal with differences in interest and cash payments, the proposed method adjusts differences directly to the liability account. Two quasi-experiments were conducted by the author. The first used students from four sections of an introductory accounting class from two medium-sized US universities. Two sections received instruction under the traditional method and two sections under the proposed method. The second quasi-experiment used two sections of an intermediate accounting class. Students in the introductory
(intermediate) course taught with the alternative method scored on average 33.9% (26.04%) higher than students who were taught under the traditional method.

2.7.4.1. Descriptive articles. Stoner and Vysotskaya (2012) describe the content and teaching approach in a typical accounting curriculum in Russia, with an emphasis on how matrix mathematical modeling is used to teach introductory financial accounting. The article provides a perspective regarding curricular development in the context of alternative cultures (i.e., Russia tends to view accounting as a science, whereas the US views it as a profession). Tinkelman (2011) provides a framework for introducing accounting as a measurement system, the implementation of which is subject to (1) uncertainty, (2) imprecise metrics, and (3) the specifics of the business activity. The approach is intended to encourage students to appreciate reasons for continuous updating of accounting standards.

Warren and Young (2012) describe the development and implementation of best practices (e.g., experiential learning exercise, business simulation, master budget project), into an introductory accounting course, which they refer to as “integrated accounting principles.” Dunn and Schwartz (2012) describe a project that integrates accounting and chemistry in which the students play the role of a manufacturer of soap and the role of the accountant for the production process. This project, which was implemented in a chemistry class at a liberal arts college in the US, allows students to learn the value of accounting in the decision-making process while learning subject matter from both disciplines. McWilliams and Peters (2012) provide the syllabus and a sample of instructional materials used in a course implemented at the Villanova School of Business that integrates introductory financial accounting and principles of finance. The course is offered to sophomores and is intended to better prepare students to perform analytical tasks in which skills of both disciplines are necessary.

Greenberg and Wilner (2011) provide learning strategies surrounding inventory topics (e.g., cost flow assumptions, cost of goods sold determination, income determination, ending inventory) in the context of a convenience store selling bottles of water. Anecdotal evidence suggests the strategy improves learning. Course tips are provided for instructors. Stuebs (2011) suggests three resources to teach the time value of money: (1) video to stimulate interest, (2) intuitive analysis, and (3) practical exercises valuing retirement assets. The appendix included in his article contains an elaborate set of teaching notes. Rambo, Main, and Beaubien (2011) describe how to account for a foreign exchange forward contract as a cash flow hedge, which is a useful demonstration for faculty teaching the proper accounting for derivative instruments. Nitkin (2011) describes “The Game of Business,” based on both Monopoly™ and The Game of Life™, which is designed for introductory accounting students to learn the accounting cycle. Brenner and Watkins (2011) provide four cases for students to learn how to use the FASB codification system. Finger (2010) provides a way to teach intermediate accounting students how to apply judgment in computing the allowance for doubtful accounts.

2.7.5. IFRS

Zhu, Rich, Michenzi, and Cherubini (2011) surveyed introductory accounting instructors (n = 348, 21.2% response rate) from 238 US institutions identified from Hasselback’s Accounting Faculty Directory (2008) regarding IFRS coverage. The majority of respondents perceived that IFRS material is important for non-accounting business majors, but over half spent less than 30 min per term on the topic. Respondents also indicated that additional coverage of IFRS topics is likely when US GAAP and IFRS convergence is more certain and when IFRS material is extensively covered in other courses. Coverage of IFRS topics is less certain and less likely when instruction materials on the topic are inadequate.

2.7.5.1. Descriptive articles. Rich, Cherubini, and Zhu (2012) present an approach to integrating IFRS into an introductory financial accounting course using eleven vignettes for each basic topic in the course. Each vignette (1) presents differences between US GAAP and IFRS, (2) highlights applications, and (3) explains a nontraditional example of application.

Jermakowicz and Hayes (2011a, 2011b, 2011c) provide a framework for teaching IFRS in the context of Deutsche Bank. They describe the implementation of a case at a US university in two MBA classes, one intermediate II class, and an advanced accounting class. The four stated learning objectives of the case are as follows: (1) enhance student understanding of the core principles and rules of IFRS; (2)
develop research and critical thinking skills; (3) enhance problem-solving skills; and (4) develop oral and written communication skills.

Alon (2012) presents a collaborative active-learning technique for introducing students to IFRS in an introductory accounting course at a US liberal arts college. Student teams are assigned a specific role (e.g., transnational audit firm, publicly traded company, private company, individual investor). Groups formulate and present their position on the adoption or non-adoption of IFRS and field questions from the class regarding the position taken.

Holtzblatt, Tschakert, and Abu-Khadra (2012) evaluated various online and webcast sources of IFRS content (i.e., E&Y, KPMG, PwC, Deloitte, AICPA, SEC, and AAA) and make recommendations for inclusion of these resources in accounting curricula. The integration of online IFRS material is described by the authors in the context of an undergraduate and graduate international accounting course at a US university.

Coetzee and Schmulian (2012) describe a pedagogy used to teach IFRS in South Africa. Lopes (2011) describes teaching IFRS in Brazil to undergraduate and graduate students. Wells (2011) suggests that IFRS may best be taught by using the Conceptual Framework developed by the IASB. An alignment of standards and principles is presented with a discussion of the benefits and limitations of the approach. Grimm and Hoag (2012) describe a writing assignment requiring students to research the history, current proposals, and cost–benefit of adopting IFRS in the US.

Larson and Street (2011) offer a compilation of resources for those teaching IFRS. Pacter (2011) compiled a list of IFRS learning resources, including practitioners, professional associations, and textbooks. Tyrrell and Aggestam (2011) analyzed educational texts that cover IFRS. Needles (2010) reports about a panel discussion at the 2009 AAA national meeting regarding how IFAC and other global organizations impact accounting education.

Hodgdon, Hughes, and Street (2011) demonstrate how to teach the importance of making judgments surrounding development of accounting systems and presentation of financial reports in the principles-based IFRS environment. Holtzblatt and Tschakert (2011b) describe a student video competition for teaching IFRS; several appendices provide details for those interested in using the approach. Allen, Mastilak, Randolph, and Weickgenannt (2012) describe a series of exercises that extend through several classes in the accounting curriculum and that are designed to demonstrate the differences between US GAAP and IFRS.

2.7.6. Managerial accounting

In a study of students enrolled in a management accounting course at a large Australian university, Tan and Ferreira (2012) analyze whether the use of software in teaching activity-based costing (ABC) is associated with learning. As part of the course, students are required to build and demonstrate an ABC cost allocation model, and then describe the benefits and limitations of the ABC technique. Following completion of the assignment, students were asked to voluntarily participate in a survey (n = 147, 67% response rate) regarding their attitudes toward computers, the clarity of the ABC assignment, their understanding of ABC, and their satisfaction with and willingness to learn more about the ABC software. Results of partial least-squares analysis does not provide significant results with respect to the association of ABC software usage and student learning.

2.7.6.1. Descriptive articles. Mastilak and Matherly (2010) present a strategy that introduces the balanced scorecard to undergraduate business students as analogous to the development of a resume. Students are more readily able to access the balanced scorecard presentation when presented in the context of a familiar task. Implementation guidance is provided. Togo (2012) demonstrates a spreadsheet-based matrix approach to the reciprocal method of allocating support department costs.

2.7.7. Taxation

Brickner, Mahoney, and Moore (2010) describe the applied learning exercise afforded by a partnership with the Internal Revenue Service Criminal Investigation’s (IRSCI) “Adrian Project.” The program

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is conducted as a partnership between IRSCI and universities and colleges to provide accounting students exposure to a career path dealing with fraud detection. A framework for administering the teaching aid and five commonly used scenarios are presented. Students \( n = 118, 100\% \) response rate perceived a significant improvement in their ability to gather and evaluate evidence of fraud. The authors suggest that participation in the Adrian Project enhances the skills and abilities essential to tax fraud detection and helpful to all career paths in accounting.

2.7.7.1. Descriptive articles. Cloyd and Weaver (2012) introduce the Tax Attitudes Survey Project (TASP), which provides undergraduate students access to empirical research that is intended to expand their understanding of current tax policy debates. The objectives of TASP are to show (1) the tax system as a product and determinant of public opinion, and (2) expose undergraduates to the art of inquiry by requiring students to conduct their own research. Course design, implementation guidance, and student performance evaluation criteria are discussed.

Muehlmann and Burnaby (2011) developed a 13-week course that explores multi-jurisdictional tax issues within the context of the life cycle of a t-shirt from raw material production to manufacture and sale. Adkins, Henderson, and Key (2012) describe how graphical organizers can be used to help students learn complex concepts in undergraduate and graduate tax courses. Materials are included to assist faculty interested in applying this strategy. Apple, Gradisher, and Calderon (2012) describe how they teach complex tax topics by having students perform the role of a tax supervisor in a professional firm. Serocki and Callaghan (2011) provide an analysis of effective tax rate computations to assist tax educators who teach accounting for income taxes for financial reporting purposes.

2.7.8. Historical perspective descriptive article

Sangster and Scataglinibelghitar (2010) discuss the life of Luca Pacioli (ca. 1446–1517) and his contributions to pedagogy and the subject of double-entry bookkeeping. This essay should be an essential read for students of accounting.

3. Educational technology

Articles in this section focus on technologies used in accounting education. This series of review articles has seen a shift in the type of articles written about educational technologies. In previous years, this section was full of articles about distance education; however, the majority of the current education technology articles are related to technologies used to support coursework, both traditional and distance courses. Section 3.1 includes four articles related to in-class technologies (i.e., computer and clickers). Section 3.2 reviews 16 articles about a variety of technologies used outside of the classroom. These technologies (which include online videos and lectures, online course–management systems, online homework systems, and others) may be appropriate as support for a traditional classroom or distance education. Section 3.3 includes reviews of three articles about distance education.

3.1. In-class technology

Premuroso, Tong, and Beed (2011) investigated the relationship between the use of clickers in the classroom and both student satisfaction and performance. Students from two sections of introductory accounting at a US university were used: (1) a treatment section used clickers \( n = 94 \), and (2) a control section did not \( n = 94 \). Both sections had the same textbook, syllabus, online homework manager assignments, instructor, and multiple-choice exams. The control group took unannounced pencil-and-paper quizzes; the treatment group took similar quizzes using clickers and viewed and discussed polling results. Using regression analysis, all formats are associated with exam score. Relative performance statistics are not reported. In general, the results of a subsequent student perception study show that the students who used clickers were satisfied with their use.

Edmonds and Edmonds (2010) investigated the effect of clickers on student perceptions related to the following classroom dimensions: (1) an active learning environment, (2) an efficient learning
environment, (3) offering meaningful feedback, (4) motivating, and (5) developing communication and teaming skills. The subjects were students in two managerial accounting classes taught by the same instructor at one AACSB-accredited university (locale not reported) using the same lectures and grading schemes. Both classes were given questions during class that were projected onto a screen: the experimental group responded using the clicker device, the control group answered on paper. To encourage participation by students in both groups, answering 60% of questions gave an opportunity for bonus points. Feedback for the questions was given verbally for the control group and by discussing the polling results for the clicker group. On the last day of the semester, students in both groups were given a survey with 50 statements to which they were asked to agree or disagree, using a five-point scale; each of these statements addresses one of the five perceptions (dependent variables). The clicker group (n = 51, 84.3% response rate) rated the following two statements significantly higher than the non-clicker group did (n = 88, 76.1% response rate): (1) active learning environment, and (2) efficient learning environment.

Lusher, Huber, and Valencia (2012) examined performance in introductory accounting between two groups at a US university: (1) a traditional classroom (n = 35, one computer and projector for instructor), and (2) a computerized classroom (n = 37, instructor and each student at a computer). The same instructor taught both sections and the grading scheme, tests, and assignments were the same. In class, the computerized section used the computer for everything, including testing, note-taking (using templates in the beginning), and homework through an online-homework manager. The traditional section completed in-class work and exams on paper, but used the same online-homework manager for homework. Five separate ANCOVA models, which controlled for GPA, gender, and class rank, revealed that students in the computerized group had significantly higher exam scores, total points, and homework scores, but not higher scores on in-class exercises or group projects. Student satisfaction and a chairperson survey about computerized classroom usage are also presented.

3.1. Descriptive article

Carnaghan, Edmonds, Lechner, and Olds (2011) offer a comprehensive overview of the use of clickers. A synthesis of research shows that students are satisfied with the use of clickers, with little evidence regarding learning improvement. Suggestions for effectively incorporating a clicker in class are offered, including (1) proper question development, (2) ways to reduce cheating, and (3) managing student cost.

3.2. Out-of-class technology

Khanlarian, Shough, and Singh (2010) investigated how student perceptions of homework software changed through the semester; five perceptions were investigated: (1) ease of use, (2) usefulness, (3) fun value, (4) reliability, and (5) importance. Students in introductory accounting at a US university were given a questionnaire to measure their perceptions (n = 89, response rate 60.1%) They were asked to complete the survey three times: (1) after seeing a software demo at the beginning of the semester, (2) half way through the semester, and (3) at the end of the semester. The mean score of all five perceptions was compared across time periods, resulting in 15 comparisons. The following changes in perceptions about the software were observed in at least one of the three time periods: (1) increase in usefulness and reliability, (2) decrease in importance and ease of use, and (3) increase in fun value.

Gaffney, Ryan, and Wurst (2010) investigated whether online homework management systems (OHMS) improve student performance and course satisfaction. Students at a US university in two sections were compared; one section used an OHMS (n = 206), and one section completed homework on paper (n = 127). Both sections attended lectures twice a week by the same professor, completed the same assignments, and took the same tests. Performance measures included grades on a set of in-class exams, pre-lecture quizzes taken at home, homework, a written ethics case, a comprehensive problem, and class average; satisfaction was measured using a survey. MANCOVA, with the following control variables, was used to examine the data: SAT verbal score, SAT math score, age, gender, ethnicity, and transfer-student status. Students in the OHMS course performed significantly better on the case and on the comprehensive problem. The other performance variables and satisfaction were not significantly different between the two groups.
Phillips and Johnson (2011) conducted a quasi-experiment to compare online homework system and an online intelligent tutoring system (ITS) homework formats on a student’s ability to learn transaction analysis and recording. Undergraduate financial accounting students (locale not reported) served as subjects ($n = 139$, 72% response rate). Results show that student exam performance improved at a significantly faster rate when using the ITS format, which is attributed to the following two features inherent in ITS: (1) detailed feedback, and (2) support throughout the problem-solving process.

Halabi and De Lange (2011) surveyed students in introductory accounting to determine their perceptions of the usefulness of WebCT, an online course–management tool. During a single semester, students from a variety of Australian and international campuses and some online (distance education) students were asked to complete the survey ($n = 361$, 53.1% response rate). Two open-ended questions were posed to determine student opinions using WebCT for online learning and for communication. The responses to these two questions were identified as either positive or negative and were classified as addressing one of three interactions: content–learner, instructor–learner, or learner–learner. Of the 322 comments about use of WebCT for online learning, 295 were positive; 214 of them addressed the content-learning interaction. Of the 178 comments about use of WebCT as a communication tool, 168 were positive; 106 of them addressed the learner–learner interaction. Sample comments are provided. Additional data collected from this survey are presented in tabular form and includes estimate of time spent on WebCT, most useful features of WebCT, and ways to improve use of WebCT.

Duncan, Kenworthy, and McNamara (2012) examined the association between course performance and participation in one of two online environments (an asynchronous discussion board or a synchronous chat room) using students ($n = 272$) in an Australian distance education Executive MBA course over three semesters. Independent variables included quantity of posts and quality of posts; quality was determined by rating each post on a scale of 1–6 according to Bloom’s Taxonomy of Educational Objectives. $^{14}$ Dependent variables were score on the final exam and total course score. In general, the authors found that quality and quantity of participation each had a positive association with performance; however, synchronous participation had a much larger effect than asynchronous participation, while quantity and quality have differing effects on the two performance measures.

Jones and Wright (2010) explored cognitive style and the effectiveness of a hypertext instructional aide on exam performance. A nonrandomized experiment was conducted over three consecutive semesters using students from an advanced financial accounting class in Canada ($n = 107$). Students in one semester did not use a hypertext aide; in a second semester the students were required to use a basic version of the aide; and in a third semester students were required to use an extended version of the hypertext aide. The materials, assignments, and instructor were held constant across all three semesters. Cognitive style was measured through a combination of transcript records and a cognition assessment instrument (the embedded figures test in which respondents find a given shape in a more complex figure, thereby indicating whether they rely on internal or external frames of reference). Exam performance was measured by two consolidation questions asked on the final exam: (1) the first question was familiar (i.e., it followed a pattern students had already seen), and (2) the second was unfamiliar. Analysis revealed that in the familiar context, only the learning aide was significant. In the unfamiliar context, the learning aide, cognitive style, and the interaction between the two were significant. An implication is that educators should not assume that all computer-based aides will enhance learning and exam performance. However, properly implemented and applied, the learning aide may encourage individuals to develop a greater capacity for abstract thinking.

Perera and Richardson (2010) studied how student use of online course tools affects exam performance. Use of web resources by second-year students ($n = 600$) in an undergraduate accounting course at an Australian university over two semesters was measured in several ways: (1) number of sessions, (2) time spent on the website, (3) number of file views, (4) number of accessed Web links, (5) number of posts on a message board, and (6) number of read posts by others. The results indicate that number of files viewed and messages posted were associated with exam score.

$^{14}$ http://www.bloomstaxonomy.org/.
Baxter and Thibodeau (2011) studied the use of intelligent learning and assessment (ILA) software and whether the use of this software enhances the acquisition of financial accounting knowledge. ILA quizzes students and adapts content based upon performance. Students in introductory accounting courses at a US university served as a control group \((n = 69)\) and a treatment group \((n = 30)\); the sections were taught by the same instructor in different semesters using all the same materials other than the ILA software. Acquisition of knowledge was measured by score on the first exam of the semester and score on a cumulative final exam. In the treatment group, use of the ILA software was assigned \((10\% \text{ of course grade})\) for the material on the first exam. This group outperformed the control group on the first exam. However, there was no between-group difference in performance scores on the final exam in the course. Within the treatment group, students who mastered more topics in the software scored higher on both exams.

Hornik and Thornburg (2010) explored the use of Second Life™,\(^{15}\) a three-dimensional virtual world, to engage students in learning. In Second Life, an accounting classroom allows students to watch video lectures, use a message board for students and another for the instructor, and view a calendar of due dates. In addition, T-account activities are required in Second Life. Students at a US university in a blended-learning, introductory accounting class \((n = 106)\) completed the course requirements. Time in the Second Life assignments was found to be related positively to score on the first exam. Rich (2012) discusses how to build and implement exercise-based video podcasts designed to augment traditional introductory financial accounting lectures. The effectiveness of the podcasts was evaluated by comparing scores on five multiple-choice questions between students in: (1) a treatment group who had access to the podcasts \((n = 92)\), and (2) a control group from the previous semester that did not have access to the podcasts \((n = \text{not reported})\). In-class lectures for both groups were identical and were administered by the same instructor. Use of the podcasts by the treatment group was optional. Students with access to the podcasts scored higher on one of the five multiple choice questions. A second evaluation of the podcasts was made through a survey of students \((n = 110)\) who had access to the podcasts in another semester. Students reported that the podcasts are useful, even when only portions or some of the podcasts are viewed.

Sargent, Borthick, and Lederberg (2011) conducted two quasi-experiments at a US university and from these experiments present evidence that ultra-short online tutorials can increase student motivation and performance. In the first experiment, the voluntary use of online tutorials was traced for principles of accounting II students \((n = 426)\) to determine if a promise of easy access and minimum time commitment afforded by the ultra-short online design enticed students to use the tutorials. An observed pattern of lower aptitude (measured by GPA and SAT math scores) with higher grades is interpreted as a signal of increased motivation in students. After controlling for cumulative GPA and SAT math score, tutorial use was associated with an increase in exam scores from exam one to the final exam; tutorial users increased exam scores, on average, 2.88 exam points more than the non-users. The objective in the second experiment was to evaluate the efficacy of the tutorials without instructor coaching and encouragement. The tutorials were made available to students, without the instructors’ knowledge, in principles of accounting II courses through the course–management system. The second experiment compared student performance for six semesters prior to implementation \((n = 2687)\) and six semesters following implementation \((n = 3100)\) of the ultra-short tutorials. Tutorial availability was associated with higher exam grades.

Theuri, Greer, and Turner (2011) investigated whether the use of a multimedia-based instructional supplement, used as a method of pre-lecture preparation, improves student performance in terms of each of the following four skills: (1) remembering, (2) understanding, (3) applying, and (4) analyzing. Students in two sections of an introductory accounting course at a US university served as the treatment \((n = 47)\) and control \((n = 58)\) groups. Both groups were given similar pre-lecture reading assignments, but the treatment group had access to (and were encouraged to use) video segments related to the reading material. Student performance was measured by exam scores. The remaining dependent variables were measured by scores on individual exam questions identified as remembering (retrieving information), understanding (determining meaning of instruction), applying (using a procedure),

\(^{15}\) http://secondlife.com/.
and analyzing (differentiating or organizing); these are the first four levels of Bloom's Taxonomy. After controlling for GPA, classification, prior knowledge of accounting, and gender, the treatment group had (on average) higher overall performance, and higher scores on questions related to understanding, applying, and analyzing. However, no difference in remembering was found between the groups.

3.2.1. Descriptive articles

Marriott and Teoh (2012) studied the use of screencast videos in addition to traditional written feedback as an assessment tool. The instructor offered feedback in two components: (1) a text file with the comments on the assigned case study, and (2) a short (about 2-min) screencast video posted on a hosting space that included praise, advice, and assistance. The barrier to institutional use is the cost in professor time and technology support. Holtzblatt and Tschakert (2011a) describe how digital video technology can enhance course delivery, with a listing of recommended videos useful to teach a wide range of accounting topics. Fessler (2012) describes his experiences with using YouTube and iTunes to make audio and video lectures available to students, and reports that students valued the resource, and that attendance was not reduced as a result of the lecture availability. Lillie and Wygal (2011) describe the implementation of virtual office hours using Skype, including discussions of establishing boundaries, implementation, and student feedback.

3.3. Distance education

Kohlmeyer, Seese, and Sincich (2011) surveyed US professionals practicing in public accounting to determine their perceptions of online accounting degrees compared to traditional accounting degrees (n = 129). The surveys asked the likelihood that the professional would hire students with the following credentials: online accounting degree from an AACSB school, online accounting degree from non-AACSB school, online accounting degree and a traditional non-accounting degree, accounting courses taken both online and traditionally, traditional degree with CPA exam passed, and online degree with the CPA exam passed. In addition, the professionals indicated the likelihood of hiring in the next 3 years someone with an online degree and their preference for online or traditional degree if the CPA exam has been passed. The results reveal the following: (1) public accounting professionals strongly prefer traditional degrees to online degrees, even when the candidate has already passed the CPA exam, and (2) AACSB accreditation is preferred in an online degree program. Additional analyses compare the rank of the respondent (partner, manager, senior) and respondent's firm size (large, small), and indicate that partners are less likely than other responders to hire someone with an online degree even if the candidate has passed the CPA exam, and large firms are less likely to hire someone with an online degree from a non-AACSB university.

Prinsloo, Müller, and Du Plessis (2010) investigated the retention of first-year accounting students at a South African university that primarily uses distance learning, with students dispersed geographically. A risk-awareness self-administered survey (called the ToolKit, which appears in an appendix to the authors' paper) (n = 37 for the treatment group; n = 36 control) was used to alert students that the student was at risk of failing. Nonparametric statistical analysis showed that those receiving the ToolKit experienced an improvement in their test scores.

3.3.1. Descriptive article

Czaja and Cummings (2010) provide a template for implementing competitive online case presentations as a means of promoting student interaction in an online course. A template is provided to guide faculty who would like to incorporate a similar strategy.

4. Faculty issues

This section reviews articles on faculty-related issues, including research productivity, evaluation of faculty performance, accreditation, job market, and textbooks. A total of 52 articles, 24 empirical
and 28 descriptive, are reviewed. Faculty continue to be interested in absolute research productivity and research productivity relative to other accounting faculty. Faculty also are interested in assessment issues, student teaching evaluations, promotion and tenure, the job market, and textbooks. The research is useful to accounting administrators who make resource allocation decisions, to members of promotion and tenure committees when they review candidates, and to faculty as they plan their careers.

Compiling research productivity data is time-consuming, and authors must make classification decisions (e.g., top three, top six, top 11, top 24, top 40) and type of journal (e.g., accounting education research). Fortunately, some public research databases have been created to help assess research productivity of individual faculty and accounting programs. Brigham Young University (BYU) has created a database of articles in the top-11 accounting journals that can be customized by university, author, area (e.g., accounting information systems, financial), and type (e.g., analytical, archival). This database currently contains articles through 2011, starting with 1990. The University of Texas at Dallas (UTD) also has a database of the top-three accounting journals from 1990 to 2011. The UTD database allows customizable searches.

4.1. Research

4.1.1. Research productivity

Hasselback, Reinstein, and Abdolmohammadi (2012) provide information about the research productivity of 5607 accounting doctoral graduates who graduated between 1971 and 2005. Data are provided by journal-quality categories (viz., best three, best 13, best 24, and best 40 journals) and by year of graduation. For example, 169 faculty graduated in 1995, and those faculty published 649 articles in the top-40 journals. For the 35 years, 75.0%, 61.6%, 52.8%, and 32.2% of faculty published no articles in the best-three, best-13, best-24, and best-40 journals, respectively. Extensive data are presented, including the top-10 faculty in each graduation year.

Glover, Prawitt, Summers, and Wood (2012) provide publication benchmark data in the top-25 accounting journals for accounting faculty (n = 157, 49% response rate) promoted to associate or full professor during 2004–2009 at the “top-75 US research institutions.” Data are classified by accounting program rankings and are provided for the top-three, top-six, top-15, and top-25 journals for the top schools based upon terciles (e.g., top 15, 16–30). For example, at schools ranked 31–45, the mean number of publications for faculty promoted to associate professor was 3.1, 3.3, 6.0, and 6.4 for the top-three, six, 15, and 25 journals, respectively. The data provide an excellent overview of the publication process and can be used to benchmark publication productivity.

Fogarty and Yu (2010) reviewed the research published in what may be viewed as the top-three US accounting journals (Journal of Accounting and Economics, Journal of Accounting Research, The Accounting Review) during 2000–2008 for publications by new scholars (defined as those who attended AAA new faculty consortia over the period 1995–2005). New faculty published 170 articles in the top-three journals during the sample period (51 individuals published more than two, 33 published two, and 86 published one), while 533 faculty published no articles in this set of premier journals over the period 2000–2008. The “prestige” of the doctoral school, as developed by Fogarty and Markarian (2007), and of the faculty member’s school were associated with publishing in the top-three journals.

Walker, Fleischman, and Stephenson (2010) surveyed accounting administrators (from Ph.D.-granting, AACSB non-Ph.D. granting, and non-AACSB accredited schools) and report the presence or absence of documented standards by accounting departments for the research component for promotion and tenure decisions. Survey results indicate that of 265 responses (31.8% response rate), 52 departments have documented research standards and guidelines for promotion and tenure; 23 have lists of journals used in the process. Journal rankings by tier are provided by name of journal and type of research.

18 BYU recently added accounting education as a category. Articles published in the Journal of Accounting Education and Issues in Accounting Education are included in the database in addition to the top-11 discipline-specific journals.
of school. These data may be useful to accounting departments when considering promotion and tenure processes.

Adler (2012) reports on the publishing trends of New Zealand accounting education scholars over the period 1991–2010 using 83 main accounting education articles by New Zealand-based authors, with 80% of those included in three journals: (1) *Accounting Education: An International Journal* (55 articles), (2) *Issues in Accounting Education* (six articles), and (3) *Journal of Accounting Education* (eight articles). Semi-structured interviews with 12 academicians at three New Zealand universities provide information about ongoing accounting education research agendas. Perceived barriers to continued accounting education research include (1) the dearth of funding or other encouragement for accounting education research, and (2) the fact that journal ranking lists for promotion and tenure tend to discourage accounting education research. The conclusion is that New Zealand’s participation in accounting education research may be eroding, and concern is expressed that faculty are becoming distanced from the scholarship of teaching and learning.

4.1.1.1. Descriptive articles. Fogarty (2010a) reflects upon his experience at the 2010 meeting of the AAA’s American Taxation Association (ATA), with stinging observations about the role of tax research and the decline in the role of tax research presentations in general. Higgins (2010) describes the topics covered at the 2010 meeting of the AAA’s ATA. Waymire (2012) discusses the state of innovation in accounting scholarship in general and institutional factors that may inhibit scholarly innovation, including the notion that innovation is a long-term construct for a discipline and is therefore difficult to measure in the short-term.

4.1.2. Other research issues

Pickerd, Stephens, Summers, and Wood (2011) rank accounting researchers who published in the top-11 accounting journals from 1990 to 2010 in total, by topic area,\(^{20}\) by research methodology,\(^ {21}\) and by last 6 years, last 12 years, and 20 years. For example, Mary Barth is ranked #1 in financial, Rajiv Banker #1 in managerial, James Hunton #1 in AIS, while Stefan Reichelstein is ranked #1 in analytical, Mary Barth is #1 in archival, and Robert Libby is #1 in experimental. These data are useful in assessing relative research productivity across accounting faculty and across research areas.

Guthrie, Everett, Vijayakumar, and Olds (2012) discuss the Author Affiliations Index (AAI), which can be used to estimate or assess journal quality. These individuals propose a modified AAI, which equals the sum of articles by 100 doctoral-granting peer group divided by the sum of articles by all authors. The notion is that higher AAI represents a more prestigious journal. AAI rankings for the top 35 accounting journals are included, with the highest AAI equal to 0.795 for *Journal of Accounting Research*. AAI can be computed for any peer group.

Coyne, Summers, Williams, and Wood (2010) rank institutions by publications in 11 top accounting journals by topic area and methodology, based on their classification of articles published between 1990 and 2009. Overall institutional rankings are provided for three windows (prior 6 years, prior 12 years, prior 19 years) as are rankings by subject area (e.g., AIS, auditing, financial) and research methodology (e.g., analytical, archival, experimental). For example, Stanford is #1 overall in total count, #1 in managerial, #3 in financial, #1 in archival, and #7 in combined average by topic area and methodology. The authors provide a website reference with the raw data, which can be accessed by accounting faculty.\(^ {22}\)

Miller, Stocks, and Proctor (2010) studied the effect of accounting faculty conducting relevant research and presenting that research in class on student perception of effective teaching. In a between-subjects, 2 (actively involved in conducting relevant research /not actively involved) × 2 (incorporates relevant research into classroom /does not incorporate) quasi-experiment, US graduate accounting students (n = 322) rate the teaching effectiveness of a hypothetical faculty member (eight attributes are used to describe the faculty member). ANCOVA results indicate that actively conducting research and incorporating relevant research in the classroom are not associated with effective teaching.

\(^{20}\) Topic areas include AIS, auditing, financial, managerial, tax, and other.

\(^{21}\) Research methodology includes analytical, archival, experimental, and other.

\(^{22}\) http://rankings.byuaccounting.net.
However, the two-way interaction between actively conducting research and incorporating relevant research into class lectures is associated with effective teaching. In a second study, 65 different students rated the eight attributes in terms of their relationship to teaching effectiveness. The authors found that the most important factors are (1) above-average communication skills, and (2) the reputation for being fair. The least important attribute, based on student responses, was conducting and publishing relevant research.


Richardson (2011), which is a commentary on Gordon and Porter (2009), discusses how to introduce accounting students to academic research. Mock, Savage, and Simkin (2010) discuss the liability exposure of faculty authors due to indemnity clauses in publication contracts.

4.2. Evaluation of faculty performance

4.2.1. Teaching skills

Green and Wang (2012) surveyed US accounting department chairs (n = 94, 23.25% response rate) regarding methods used to assess teaching performance. Student evaluations of teaching are used by 97% of the departments, and additional sources are used by 80.3%. Class evaluation by peers is the most frequent additional source; other methods include evaluation of course syllabus and materials, instructor notes, and course exams. This article may be useful to department administrators who want to use additional sources to evaluate teaching performance.

Seifried (2012) reviewed the literature on teachers’ pedagogical beliefs, which may be teacher-oriented (provides information) or student-centered (facilitates understanding). Accounting teachers in Germany (n = 225, 36% female) completed an online survey about teacher-orientation. A subsample (n = 21, 33% female) participated in follow-up interviews to assist in interpreting the surveys. Cluster analysis revealed three orientations: (1) constructivist, (2) instructional, and (3) systematic. The essence of the results is that German teachers tend to be teaching-oriented using techniques that provide information rather than those who facilitate learning. A conclusion is that the education of accounting teachers should include information on teacher- or learner-orientation because it impacts classroom practice.

4.2.2. Student evaluations of teaching (SET)

Bruns, Rupert, and Zhang (2011) investigated whether the student response rate and teaching ratings are different between paper and online SET. Student SET data for 1089 courses at one private US university for all business school disciplines were compared: (1) 2006–2007 paper, and (2) 2008–2009 online. Courses were included in the analysis only if the instructor had both paper and online SETs during the period (n = 189 paired observations). Mean and median scores for teaching effectiveness were significantly higher for the online format. Response rates for paper SET were higher than for the online format. Further, students report that the requirement to complete the online evaluations outside of class is an impediment to their completion.

Bandura and Lyons (2012) studied student perceptions about how professors regard them in the faculty–student relationship. Accounting students in an intermediate accounting class in a US university (n = 81) were asked four questions, and the results were evaluated using a simple frequency analysis. The first question on the survey instrument asked if the student ever felt as if a professor had “given up” on his or her learning (65% affirmative). The second question categorized the experiences by severity, ranging from mild (e.g., “instructor had no enthusiasm”) to severe (e.g., “instructor insulted students”). The third question elicited student responses to the perceived disrespect identified in the second question, ranging from “no action” to “approaching the professor for assistance to reconcile the dissonance.” The fourth request was to identify ways that professors can show respect for a student’s learning, which includes responses about enthusiasm, personal interest in the student, learning styles, and availability. The results offer some insight into the student’s perspective of how a professor may positively influence the faculty–student interaction and, in so doing, promote learning.

4.2.2.1. Descriptive articles. Sarkis and Seol (2010) introduce Data Envelopment Analysis (DEA) as a method for checking validity of teaching-evaluation instruments. The procedure is a simple way to ensure that student evaluations of teaching (SETs) are effective measures for promotion and tenure purposes. Crumbley, Flinn, and Reichelt (2012) offer a resounding criticism of the practice of using SET scores for faculty-evaluation purposes. They assert that the use of SET scores originated for formative use; yet, the widespread summative use encourages grade inflation and reduced course content rigor. The authors argue that educators should be less concerned with student satisfaction and more concerned with authentic learning.

Wygal and Stout (2011) surveyed award-winning US accounting educators at AACSB institutions (n = 105, 94% response rate) to collect their views on both effective and ineffective teaching practices. The article provides reflections by those who have thought deeply about the teaching process and who offer practical advice for accounting faculty interested in improved teaching effectiveness. Three prominent themes are presented: (1) effective teaching is critical to the continuity of academic scholarship, (2) improved teaching is available to those who begin with serious introspection and follow a continuous-improvement plan, and (3) the importance of learning communities to the goal of fostering deeper thinking about the developmental process of improving teaching effectiveness.

4.2.3. Promotion and tenure

Reinstein, Hasselback, Riley, and Sinason (2011) provide a thorough discussion of the biases inherent in using citation counts for promotion and tenure decisions and other decisions (e.g., teaching load, resource allocation). The authors surveyed accounting faculty who have published over 15 articles in a set of “top-40” journals (n = 93, 41% response rate) about positive and negative factors affecting citing a work, and then provide extensive descriptive data. The authors note that accounting faculty may be at a disadvantage in systems that use formal citation analysis because (1) a low number of accounting journals are listed in citation indexes, (2) accounting journals tend to publish fewer articles than other disciplines, and (3) other factors.

4.3. Other faculty-related issues

4.3.1. Accreditation descriptive article

Trapnell and Williams (2012) describe the growth of the AACSB International over time and its significant activities.

4.3.2. Job market

Bouillon and Ravenscroft (2010) surveyed accounting faculty (n = 1803, 43% response rate) about their academic degrees and dissertation topics. Using Hasselback’s Accounting Faculty Directory (2006–2007), the authors determined that, through 2008, 7109 doctoral degrees in accounting were awarded, with 66.2% having an undergraduate degree in accounting (75.5% having business degrees), and 70.3% using archival techniques in their dissertations. The use of archival techniques increased
from 30.7% in the 1970–1974 period to 55% during 2000–2006, while the use of surveys or cases declined from 43.5% to 18.3% over the same period.

Fogarty, Saftner, and Hasselback (2011) compared the doctoral-degree granting institution to the hiring institution for a set of newly graduated accounting academics in the US. The analysis was completed using two and three tiers of doctoral-granting institutions based on an equal number of schools in each tier in one analysis and using natural divisions of schools in another analysis. The data reveal the number of schools who place below or above their own tier. The data are useful to doctoral students in the job market and schools recruiting them.

Gary, Denison, and Bouillon (2011) used a simulation to estimate the return on investment (ROI) for individuals who leave public accounting to pursue a Ph.D. and subsequently become an accounting faculty member. The simulation takes place within a 3 × 3 matrix; three levels of longevity in public accounting (departure after 3, 5, and 7 years), and three levels of Ph.D. program length (4, 5, and 6-year). Within each of the nine cells, four alternative career-path simulations are performed. The four career paths vary in terms of the number of institutional assignments and the number of years before achieving the rank of full professor. The results show that a hypothetical individual leaving public accounting to pursue a Ph.D. and a career as an accounting faculty member can earn a positive return on the investment over the course of a career. The return increases with earlier departure from public accounting and less time spent in a Ph.D. program.

Geary, Kutcher, and Porco (2010) describe an innovative way of addressing faculty shortages by partnering with public accounting firms to staff courses. The program is called Partner Teaches Program (PTP), which includes training for partners assigned to teach. The authors surveyed students, department chairs, and the partner-professors about their perceptions of the experience (n = 271, representing 10 of the 12 participating PTP schools) and found that PTP is a reasonable way to meet the educational goals of an accounting department.

4.3.3. Textbooks

Phillips, Alford, and Guina (2012) investigated the association between the function and placement of illustrations and student learning, using a quasi-experiment in one course at a single Canadian institution. The design is 2 (illustration placement, early vs. late) × 2 (decorational vs. conceptual function) × 1 (control group, no illustrations), and the dependent variables are tests of retention and transfer tests after the students read the experimental materials related to a customer loyalty program. The interaction of placement and function was significant for both types of questions, indicating that students learn more when decorational images precede corresponding text and when conceptual images precede corresponding text.

Stevens, Clow, McConkey, and Silver (2010) surveyed US accounting faculty (n = 348, 9.5% response rate) and marketing faculty (n = 310, 14.3% response rate) about the textbook-adoption decision. Text content, availability of electronic ancillary materials, and edition of text are the three most important factors to accounting faculty. The most effective means to persuade a professor to adopt a text is to provide a physical copy of the text for adoption consideration.

Ferguson, Collison, Power, and Stevenson (2010) used surveys and semi-structured interviews to gain information about faculty perceptions regarding introductory financial accounting textbooks. The sample of participants was drawn from the British Accounting Association (BAA) Research Register; those individuals teach introductory financial accounting in the UK (n = 36, 13.3% response rate). The online survey requested information about the text used and perceptions about the topics covered (five-point scale where 1 = not at all and 5 = quite a lot). Participants also provided responses to perceptions about optimal topical coverage. The survey was followed by 11 semi-structured interviews with faculty who also completed the survey. The article provides a wealth of details that may be helpful to UK educators participating in the selection of an introductory financial accounting textbook. A key finding is that available textbooks do not adequately present the needs of all stakeholders in the accounting process.

4.3.3.1. Descriptive article. Snead, Stott, and Garcia (2010) describe a remedy for a conceptual weakness in managerial accounting textbooks related to the topic of misapplied capacity (i.e., overhead) costs.
4.3.4. Incentives and skills

Wheeler, Carnes, and Eakin (2010) surveyed Beta Alpha Psi (BAP) advisors (n = 133, 50% response rate) regarding the incentives to be a BAP advisor. Between 1986 and 2008, the percentage of non-tenure-track advisors increased from 14% to 32%. Regarding incentives for the BAP advisor in 2008, 9% receive monetary compensation, 17% receive course release time, 66% receive service credit, and 68% have travel expenses paid. The two most important reasons cited for being an advisor are (1) better connections to the profession, and (2) intrinsic rewards.

Marshall, Smith, Dombrowski, and Garner (2012) provide a list of 20 skills and abilities that accounting faculty should have. They surveyed accounting educators (n = 241, 20% response rate), randomly chosen from Hasselback's Accounting Faculty Directory (2008). The 20 skills and abilities are rank-ordered based upon overall responses. The most important factors are as follows: developing a business and ethical foundation, teaching accounting topics, and maintaining a positive attitude toward life-long-learning.

Lindsay (2012) describes a proposal to change the continuing professional development (CPD) requirements for members of the International Federation of Accountants (IFAC) from input-based (required number of hours) to output-based (reflective scheme tailored to a specific person’s lifelong learning goals). A mail survey of 3200 members (n = 501, 15.1% response rate) of the Institute of Chartered Accountants in England and Wales (ICAEW) identified (1) relevant learning activities, (2) activities appropriate for CPD, and (3) learning motivations. The results offer support for a move to the output-based format.

4.3.5. Other faculty-related issues: descriptive articles

Several articles address faculty experiences surrounding the February 2011 and September 2010 earthquakes at the University of Canterbury in Christchurch, New Zealand. Bjorn-Andersen (2011), a visiting professor on campus for 1 week not yet accustomed to the environs, discusses the challenges of being forced to adapt teaching methods in 1 week’s time in response to the earthquake. Todorova and Bjorn-Andersen (2011) describe the challenges of the information technology environment during the earthquake crisis in February 2011. Dixon (2011) reflects upon the impact of the earthquake on the university; how life was before and after the disaster. Lord (2011) describes her experiences as department chair during and after the earthquakes of September 2010. Vossllamber (2011) describes how he was able to manage his teaching assignments in the face of the earthquake in September 2010.

Brink, Glasscock, and Wier (2012) continue a stream of research related to the state of accounting Ph.D. programs. They obtained data from the website of 88 US institutions, surveyed current doctoral students (n = 260, 59% response rate), and interviewed a set of Ph.D. program coordinators (n = 14). Extensive data are reported. The authors make several recommendations to improve Ph.D. programs: (1) increase information to potential students, (2) increase financial support, (3) reduce the program costs and costs to students, and (4) diversify training across teaching specialties.

Lucas (2011) discusses autoethnography as a means of self-reflection about one's role as a teacher and educator. Wygal (2011) describes initiatives to improve the scholarship of teaching at Rider University in the US by documenting the benefits to the academy of involving faculty on specific projects (e.g., writing, gender/race issues, teaching improvement). Wilkerson (2010) describes the role of accounting faculty in enhancing the profession’s integrity through its dual role of scholarship and practice.


5. Students

This section reviews articles related to student issues. Students are an important focus of research because understanding their motivations, skills, and career interests informs the academy. Of the 44
articles in this section, 32 are empirical. Generally, authors focus on cognition, student characteristics, and curricular innovations. The articles related to students are subdivided into four areas: (1) choice of major and career, (2) student skills and characteristics, (3) approaches to learning, and (4) academic dishonesty. Suggestions for research in the area of students are presented following the reviews.

5.1. Choice of major and career

5.1.1. Major

Coetzee and Oberholzer (2010) investigated the perceptions of the accounting profession and other professions held by secondary school career guidance counselors and math teachers in South Africa. Respondents (n = 78, 39% response rate) evaluated 24 attributes (e.g., social status, job security, earning potential) for four professions: (1) accounting, (2) law, (3) medicine, and (4) engineering. Responses indicate that accounting is perceived as the least interesting, allows the least interaction with others, and has the lowest requirement for communication skills. Comparison of this study is made to other studies using the same research instrument, which indicates that the results have been similar. The authors suggest that changing the misconceptions of those who influence a student’s choice of major must be addressed to relieve the shortage of accounting professionals.

Manganaris and Spathis (2012) surveyed students (n = 231, response rate not reported) in an introductory accounting course in Greece to determine their initial perceptions of the course and whether those perceptions changed over the duration of the course. A survey given at the beginning and end of the semester contained 11 statements about accounting (e.g., helpful in my career, helpful in future courses, boring, rewarding) with which the student was asked to agree or disagree, using a five-point scale. The following conclusions were drawn from the survey-response data: (1) the instructor’s influence on the perception of the course decreased; (2) enjoyment in the course increased; (3) perception of the course’s worth increased; and (4) expected grade increased.

Jones and Wright (2011) investigated the relationship between cognitive style and student performance in introductory accounting and in the initial and final decision to major in accounting. Two alternative cognitive styles were considered: (1) field independence (FI), and (2) field dependence (FD). FI individuals are said to rely more on internal frames of reference and are less dominated by external cues and are able to perceive analytically. By contrast, FD individuals are said to rely more on external frames of reference and depend to a greater extent on their superior social skills to solve a problem, implying that FDs have a greater ability to perceive globally. Students enrolled in a large university in Canada (n = 142, 42% response rate) volunteered to complete intermediate-level accounting questions. Results from a regression analysis reveal that the initial decision to major in accounting (self-reported at the beginning of the introductory accounting course) and performance in the course are not affected by cognitive style, but completion of a high-school accounting course does have a positive, significant effect on both. Final decision to major in accounting (measured when the student graduated) is positively associated with the FI cognitive style.

5.1.1.1. Descriptive articles.

Kaenzig and Keller (2011) describe a program-long effort at a US university to attract and retain accounting majors. The recruiting initiative is focused on out-of-the-classroom activities and includes a student recognition dinner associated with the principles of accounting course, a junior-year experience with seminars for professional development, and internships.

Deines, Bittner, and Eichman (2012) write an essay about the Accounting Pilot and Bridge Project (the Project) and propose it as a replacement for the current high-school accounting course. The Project is designed to combat the decline in graduating accountants by providing advanced placement credit for college accounting.

Williams (2011) writes an essay about his personal experiences with the first course in accounting as a student, as a graduate teaching assistant, and as a professor. He observes that the delivery of first course in accounting is, and will continue to be, influenced by budgetary and technological considerations. However, the first course in accounting remains a critical offering across all disciplines and is a major influence in the decision of a student to major in accounting.

Jenkins and Rubin (2011) discuss the importance of a well-implemented introductory accounting course sequence as providing two benefits: (1) it provides a framework for all business majors to
appreciate economic issues, and (2) it serves as a context for attracting students to major in accounting.

5.1.2. Recruitment and career opportunities

Nicholls, Wegener, Bay, and Cook (2012) examined the ability of respondents to manipulate results of emotional intelligence (EI) assessment instruments [Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)]\(^{24}\) and the Emotional Quotient Inventory (EQ-i)].\(^{25}\) Students (n = 154, response rate not reported) in a second-year management accounting course at a Canadian university were asked to attend two 2-week apart sessions. At the first session, they were asked to take one of two EI assessment tests (random assignment). At the second session they were (1) given a job description (some requiring high EI, some requiring low EI); (2) asked to retake the same EI assessment test; and (3) asked to role play to seem qualified for the job described. Results from regression and difference in means analyses provides evidence that, to enhance the apparent fit with the job description, students were able to manipulate their EI assessment score (on both assessment instruments) as needed. The results indicate that (1) neither assessment tool is superior to the other, and (2) both assessment tools need improvement before use as an effective employment-screening tool.

5.1.3. Career awareness descriptive articles

Sin, Reid, and Jones (2012) discuss three conceptualizations of accounting work held by students: (1) it is routine, (2) meaningful, and (3) moral. They suggest a need for new curriculum resources to influence student conceptions of accounting work to better align with the needs of the profession. Amer, Bain, and Wilburn (2010) describe the implementation of an accounting career panel used to improve student awareness and interest in the accounting profession. Loeb (2012) discusses the role of degree programs and CPE in the social control of the public accounting profession. Social control is defined as the socialization and the instruments that a profession uses to regulate its members. He comments on how (1) outside stakeholders might misunderstand the effects of ethical education, and (2) CPE should be used in the profession’s disciplinary process.

5.2. Student skills and characteristics

5.2.1. General skills

Awayiga, Onumah, and Tsamenyi (2010) surveyed accounting graduates (n = 131, 80% response rate) and their employers (n = 25, 54% response rate) in Ghana to determine the knowledge and skills that are needed for the profession. Respondents rate the importance of nine professional skills (e.g., communication, critical thinking, technology). The mean perceived importance of each skill between recent graduates and their employers was compared. Of the professional skills surveyed, only the responses for computer technology were significantly different, with employers rating these skills higher than did employees.

Triki, Nicholls, Wegener, Bay, and Cook (2012) investigated how performance in an accounting curriculum (i.e., overall GPA) is affected by three characteristics: (1) anti-intellectualism (preference for memorization over critical thinking), (2) tolerance for ambiguity (tendency to perceive ambiguous situations as a threat), and (3) locus of control (tendency to perceive oneself as in control of their destiny). Students (n = 199, response rate not reported) enrolled in all levels of accounting courses at a Canadian university completed survey instruments to measure these three characteristics. ANCOVA revealed that higher tolerance for ambiguity and lower anti-intellectualism are associated with higher GPA. Results of an analysis by year show that the association diminishes in the third and fourth years. Locus of control and other covariates (e.g., age, year in school, gender) were not statistically significant.

Braun and Sellers (2012) report student perceptions of a daily motivational quiz administered in an introductory accounting class. The purpose of the quiz is to motivate students to remain abreast of the


material to enhance learning. The quiz consisted of three open-notes conceptual questions at the beginning of every class; the total points on all quizzes was equal to 10% of the course grade. The results of student perception surveys (n = 66, response rate not reported) administered over the course of four semesters at a midsized university in the US are reported. A qualitative analysis suggests that the majority of students indicate that the daily quiz motivated them to (1) prepare for class, (2) learn the material, and (3) participate in class. In a separate analysis, failure rates in classes with and without the daily quiz were compared; the failure rate was anecdotally lower in the daily quiz class, but withdrawal rates were the same.

Xiang and Gruber (2012) examined the effect of a high school accounting course on student (n = 383, 94.6% response rate) performance in the first postsecondary accounting course at one US university. The sample consisted of business students enrolled in an AACSB-accredited college. Results of a regression model suggest that students with high school accounting course experience (n = 180) are less likely to fail the first postsecondary accounting course, and that such students outperform those who do not have high school accounting course experience.

Harrast, Strong, and Bromley (2010) surveyed junior-level accounting students (n = 319, 98% response rate) at three US universities to determine the strength of their technology skills. Junior and senior students at three universities who were in or had just completed an AIS course were asked to complete a survey that asked them to self-assess their knowledge (1 = no knowledge to 7 = expert) of 36 technologies, including email, word processing, spreadsheets, tax software, work flow expert systems, and encryption. An analysis of mean responses suggests that a large portion of accounting students is not proficient in the surveyed technologies, even after completing the majority of undergraduate course work and supports increased technology training in accounting curricula.

5.2.2. Communication

Stone and Lightbody (2012) conducted a qualitative research study to learn about the role of listening skills in client-communication practices. The participants were Australian CPAs (n = 10 randomly selected from the CPA Australia membership database). A semi-structured interview approach was used to learn about the relationship between accountants and small business owner–manager clients. Findings include: (1) a preference for face-to-face contact, (2) accountants believe they are excellent listeners, (3) interpreting facial cues is critical to understanding client needs, and (4) telephone contact is the second-best communication technique. The results suggest that accounting curricula should incorporate client-communication instruction and skill development.

Ameen, Jackson, and Malgwi (2010) investigated student perceptions of verbal communication skills required in accounting careers. Students in eight foundation of accounting courses at four US universities were surveyed in 1998 (n = 576, response rate not reported) and in 2006 (n = 322, response rate not reported). Respondents were asked to indicate how much oral communication they believed is required for 24 professions (seven-point Likert scale). Differences in mean responses were evaluated. Results suggest that students entering the first accounting class consistently underestimate the oral communication skills required in the accounting profession, indicating that accounting graduates may be unprepared for the communication aspect of professional life.

Gray and Murray (2011) surveyed practitioners from New Zealand accounting firms (n = 146, 19.2% response rate) to examine the perceived importance of verbal communication skills in the accounting profession and the extent to which those skills are exhibited by new accounting graduates. The survey addressed 27 verbal communication skills classified into five groups: (1) listening, (2) general skills, and communicating with (3) colleagues, (4) clients, and (5) superiors. Results of a qualitative analysis show the following: (1) listening skills are deemed most important, and (2) the 27 skills are observed less often than their relative importance would indicate.

5.2.2.1. Descriptive articles. Camp and Schnader (2010) describe the use of two debate scenarios (tax and SOX contexts) to improve critical thinking skills. Sufficient details are presented to permit the reader to develop or adapt debate cases, where student communication facilitates critical thinking. Byrne, Flood, and Shanahan (2012) discuss three themes of student apprehension in oral communication: (1) fear of peer evaluation, (2) prior communication experiences, and (3) speaker preparation. Daff (2012) discusses the similarity between doctor–patient and the accountant–client interpersonal
communication skills. She suggests that a communication evaluation template be used. A resource guide is provided as an appendix. Chu and Libby (2010) used a tax context to demonstrate that student participation in writing mini-cases enhances creativity and improves learning. Students developed six mini-cases during the semester. In each case students were required to identify and defend the most plausible solution. Details of the assignment and assessment are provided in appendices.

5.2.3. Student characteristics

Ravenscroft, Waymire, and West (2012) examined the relationship among three variables: (1) exam performance, (2) gap between expected exam score and actual score (calibration error), and (3) the student’s belief about learning and ability (mindset). Mindset was measured by asking respondents to agree/disagree on a seven-point scale with eight statements about the nature of intelligence; respondents were categorized as either fixed (belief that intelligence is fixed in a person) or growth (belief that intelligence is changeable). Participants \( n = 206 \) were senior- and graduate-level accounting majors at a US university. Regression analysis revealed three significant results: (1) exam score was inversely related to calibration error, (2) mindset was not a determinant of exam score, and (3) growth mindset was associated with both improved performance and decreased calibration error.

To identify characteristics associated with the choice of a long-term career in accounting, Swain and Olsen (2012) conducted a longitudinal study of students over 15 years, beginning with their enrollment in an introductory accounting course. Characteristics were measured with the Myers-Briggs Type Indicator (MBTI), which identifies personalities on four preference scales: (1) extraversion or introversion, (2) sensing or intuition, (3) thinking or feeling, and (4) judging or perceiving. Introductory accounting students \( n = 1208 \), 81.1% response rate) at a large private US university were asked to complete the MBTI assessment in 1992 and 1993. A follow-up survey regarding career choice and longevity was conducted in 2008 with a different set of students \( n = 717 \). Path and mediation analysis showed that those classified as both sensing and judging are attracted to accounting, as evidenced by sustained employment in accounting academe and the accounting profession. The evidence also indicates that those classified as both intuition or perceiving do not tend to choose accounting in their academic and professional career.

Cook, Bay, Visser, Myburgh, and Njoroge (2011) examined the difference in EI between accounting freshmen and seniors at a sample of Canadian, South African, and US universities \( n = 430; \) response rate not reported. EI was assessed using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Self-Report Psychopathy-III (Williams, Paulhus, & Hare, 2007). ANCOVA revealed that EI (1) was not significantly different between first and fourth year students, (2) was positively associated with work experience, and (3) was lower for accounting students relative to liberal arts students. Implications are that accounting students do not possess a sufficiently high level of EI necessary for success in the profession.

Fogarty and Goldwater (2010) examined whether gender differences exist in effort, performance, and voluntarily retaking exams for a better grade. In an upper-level management accounting course at a large US university, students \( n = 108 \), 50% female) were given access to computer software that affords the opportunity to practice for and to take quizzes. The software captures student effort (measured by number of practice questions completed, time spent practicing, and score on practice questions). An analysis of mean responses revealed no statistical difference in course grades between the genders or exam retakes. However, females expended significantly more effort in terms of number of practice questions, but not the other two measures of effort.

Berger and Boritz (2012) examined how the following four information integrity attributes are used by students: (1) completeness, (2) currency, (3) accuracy, and (4) authorization. A balanced scorecard experiment was used to manipulate the four information integrity attributes as high or low, resulting in 16 different scorecards. Fourth-year undergraduate accounting students \( n = 144 \), response rate not reported) at a large public university in the US were randomly assigned to four of the balance scorecard conditions and asked to make an assessment about the expected performance of the company. Structural equation modeling results indicate that student performance judgments and

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confidence improve with higher levels of information integrity. Completeness and accuracy were associated with judgment and confidence, but not currency and authorization.

Ahmad, Anantharaman, and Ismail (2012) investigated the relationships among four student characteristics: (1) motivation toward goals, (2) perception of academic environment (i.e., facilities, peers, faculty, and academic program activities), (3) involvement (energy devoted to academics), and (4) professional commitment. Students \( n = 622, 47.8\% \) response rate at seven Malaysian universities completed the research instrument that measures these four characteristics. A structural equation model derived from the data indicates that motivation positively influences perception of environment, involvement, and professional commitment; perception of environment also positively influences involvement; and involvement positively influences professional commitment.

Haman, Donald, and Birt (2010) collected information about the perceptions and expectations of international students \( n = 72, \) response rate not reported in an Australian graduate-level corporate accounting course. Survey data about expectations (e.g., challenging, interesting), the deep and reflective nature (e.g., new concepts, problem-solving), and usefulness of the course in future career were collected. The mean response data are presented and show that overseas students expect the postgraduate corporate accounting course to be challenging and interesting.

5.3. Approaches to learning

Jones and Wright (2012) studied the effect of two alternative cognitive styles (field independence, FI, vs. field dependence, FD) on student examination performance. FI individuals rely more on internal frames of reference and are less dominated by external cues and are able to perceive analytically. FD individuals rely more on external frames of reference and depend to a greater extent on their superior social skills to solve a problem, implying that FDs have a greater ability to perceive globally. Students enrolled in a large university in Canada volunteered \( n = 142, 42\% \) response rate to complete questions from intermediate accounting. The questions are identified as structured or unstructured and familiar or unfamiliar. The results of logistic regression analysis indicate that cognitive style affects the final decision to major in accounting but is not influential in the initial decision to major in accounting or performance in introductory financial accounting.

Honn and Ugrin (2012) examined how cognitive misfit (i.e., incongruence between a student’s cognitive style and the cognitive demands of an accounting task) affects student performance (i.e., grade on an accounting task). Student cognitive styles were defined as sequential (process discrete pieces of information in working toward orderly solutions) or global (develop understanding and solutions in terms of the total picture). Students at two large US universities \( n = 138, \) response rate not reported participated in a \( 2 \times 2 \) between-subjects experiment. These students were first identified as either sequential or global processors and then were asked to complete either a step-by-step task or a simultaneous task. Score on the task was not associated with cognitive style alone, but the interaction of style and task type was statistically significant, indicating that students perform better when there is no cognitive misfit.

Sugahara and Boland (2010) assessed the relationship between learning style and culture. Students from Japan \( n = 69, \) response rate not reported and Australia \( n = 61, \) response rate not reported completed a survey, which measures learning style and cultural differences. As well, students provided selected demographic information. Learning style was measured by scoring students in four preference categories: (1) concrete experiences, (2) abstract conceptualization, (3) reflective observation, and (4) active experimentation. Cultural differences were measured by scoring five characteristics: (1) individualism, (2) masculinity (i.e., assertive and competitive), (3) power distance (i.e., prestige and wealth), (4) uncertainty avoidance, and (5) long-term orientation. Regression analysis provides evidence that students who prefer to learn by doing (i.e., reflective observation and active experimentation) have higher individualism scores. Differences between the Japanese and Australian scores for learning styles and cultural characteristics are presented and discussed.

Watty, Jackson, and Yu (2010) contribute to the student-approaches-to-learning literature by conducting 14 student focus groups \( n = 70 \) in Melbourne (five groups), Singapore (five groups), and Hong Kong (four groups). Discussion topics were designed to address four topics: (1) student approach to learning; (2) preferred assessment tasks; (3) the most challenging tasks; and (4) barriers to better
results on assessments. The results show that English competency is the most important factor (or barrier for non-English speakers) to learning.

**Abhayawansa and Fonseca** (2010) interviewed 10 Sri Lankan students \((n = 10,\) response rate not reported) to explore conceptions of learning (CL) and approaches to learning (AL). The students were sorted into one of six learning categories by the interviewer: (1) increasing knowledge, (2) memorizing, (3) applying, (4) understanding, (5) seeing in a different way, and (6) changing as a person. Students also were categorized into a variety of surface (e.g., reading, memorizing, listening) and deep (e.g., linking, discussing, applying) approaches. Student responses to the interviews offer insight into (1) how cultural background influences their conceptions of learning and learning styles, (2) what motivates their studies, and (3) their preconceptions of accounting.

**Abhayawansa, Tempone, and Pillay** (2012) investigated how prior learning experience affects student approaches to learning (SAL). Prior learning experience of second-year and third-year finance and accounting students \((n = 190,\) response rate not reported) was categorized by how they entered the Australian university: directly from secondary school or indirectly from technical schools. SAL was measured using a 42-item questionnaire from which students were scored on three learning characteristics: (1) surface, (2) deep, and (3) achieving learning motives and strategies. Results indicate that the technical school transfer students had significantly higher scores in deep motive and achieving strategy scales.

### 5.4. Academic dishonesty

**Ballantine and McCourt Larres** (2012) explored the issue of unintentional plagiarism by accounting students, which refers to a student’s misunderstanding of what constitutes plagiarism. The research focus was on whether students perceive authorial identity (i.e., a student’s self-awareness as a writer, which can be linked to unintentional plagiarism) differently as they progress from first to third year in an accounting curriculum. The participants \((n = 217,\) 100% response rate) were accounting students in first, second, and third year at a UK university. Each student rated 18 statements using a five-point scale (where 1 = agree strongly and 5 = disagree strongly). Major findings include: (1) accounting undergraduates had positive perceptions of their authorial identity for all 3 years studied; (2) second-year students had stronger authorial identity than first-year students; (3) second-year students had more difficulty than either first-or third-year students in expressing accounting topics in their own words; and (4) students would benefit from authorial identity instruction in second year to increase awareness of alternative approaches to writing. Further study is recommended to identify appropriate interventions to enhance authorial identity.

**Guo** (2011) hypothesizes that plagiarism is multidimensional, with 11 constructs: (1) pressures, (2) academic integration, (3) awareness, (4) moral capability, (5) gender, (6) age, (7) academic performance, (8) accounting education, (9) new technology, (10) institutional support, and (11) cultural influences. A survey was administered to undergraduate and graduate accounting students at two universities in the UK \((n = 381,\) response rate not reported). Structural equation modeling results find that gender, academic integration, moral capability, and cultural influences are antecedents of plagiaristic behavior. Suggestions are offered to faculty who might wish to address these issues.

**MacGregor and Stuebs** (2012) find that rationalization is an important aspect of a student’s decision whether to cheat. Student cheating was modeled consistent with the fraud triangle (incentives, opportunity, and rationalization). Rationalization was characterized in four different ways: (1) relative fairness/advantage (e.g., to eliminate a perceived disadvantage with peers), (2) non-prohibitive ambiguity (i.e., cheating is acceptable unless expressly prohibited), (3) insignificant aid to the cheating, and (4) relational significance (i.e., perception that the instructor is indifferent about the student as a person). The participants were accounting students at the senior or graduate level at a US university \((n = 79,\) response rate not reported) who had completed formal education in ethics and in the school’s honor code. Rationalization and control variables were regressed on self-report intention to cheat. The

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28 The topic of academic dishonesty first appeared as a topic in this series of accounting education literature reviews in Apostolou et al. (2010), where it is included as a curricular issue. It is more appropriately classified as a student behavior, so now appears in Section 5.
results offer strong support that the first three depictions of rationalization, and some support for the fourth, are associated with the decision to cheat. Faculty can use these findings to create an environment that makes it more difficult to rationalize cheating by providing clear instructions about prohibited and acceptable resources, emphasizing that all cheating is significant, developing rapport with the class, and creating disincentives to cheat.

Bernardi, Banzhoff, Martino, and Savasta (2012) studied student intent to cheat in the future based upon (1) knowing others who cheat, (2) prior cheating behavior, and (3) ethical sensitivity about cheating. The sample consisted of business students enrolled in accounting courses at three US universities (n = 195, response rate not reported). A questionnaire derived from prior research was used. A major finding is the identification of a so-called cheating chain, where cheating on a minor examination leads to cheating on a major examination and ultimately the intent to cheat in the future. A student’s ethical sensitivity was not found related to the decision to cheat. The results are supported by data obtained from prior similar studies of students in Australia, China, Ireland, Japan, and the US.

O’Neill and Pfeiffer (2012) present a model of academic cheating that considers moral, social, and economic incentives to cheat. An online survey of students from three different liberal arts universities seeking an MBA degree in the US (n = 686, 17.2% response rate) was used to evaluate the model. Two of the three schools have an explicit honor code while the third one does not. Participants were asked to report (1) how often they engage in a set of 14 cheating behaviors, and (2) whether the behavior constitutes cheating. Based on the scoring of these 14 cheating behaviors, two regression models of demographics, incentive variables, and honor code school (or not) were analyzed. One model includes all 14 behaviors, while the second includes only the six most egregious cheating behaviors. Major findings are as follows: (1) an honor code that is rooted in campus culture is a deterrent to cheating; (2) males are associated with egregious cheating behaviors; (3) students planning to join an MBA program or who had a low undergraduate GPA had a higher probability of cheating; and (4) a behavior perceived as severe is less likely to occur.

Smith, Derrick, and Manakyan (2012) investigated exam-related cheating behavior of accounting students in the context of the motivation and cheating model reported in Smith, Davy, and Rosenberg (2009). The participants were finance majors (n = 342, response rate not reported) from three US universities. Structural equation modeling results show that the more alienated a student feels, the more likely he or she is to have cheated in the past or to cheat in the future. Further, the results affirm the findings of Smith et al. (2009).

Christensen, Cote, and Latham (2010) investigated whether students are honest about accessing unauthorized internet case solutions in the presence of a variety of interventions intended to discourage the behavior. Moral development, moral identity, age, gender, and GPA were among the factors considered in the analysis. The sample consisted of accounting majors (n = 28, response rate not reported) in a senior-level auditing course at a US university. Data were collected weekly throughout the 16 weeks of the course, starting with the DIT and interventions that included (1) discussion of the DIT results, (2) explicit instructions not to access the solution, and (3) various readings on ethics and citizenship. The results show that 90% of the students accessed the solution inappropriately, and all but one of those lied about doing so. The conclusion is that students find it acceptable to cheat using information technology, suggesting that online environments promote a culture of cheating.

5.4.1. Academic dishonesty: descriptive article

Singh, Mangalaraj, and Taneja (2011) demonstrate three techniques for detecting plagiarism in spreadsheets submitted electronically for a grade. Techniques include clearly identifying what is considered plagiarism and requiring unique input values (e.g., birth date) in assignments.

6. Conclusion and suggestions for future scholarship

6.1. Conclusion

During the 3-year period covered by this review (2010–2012), more than 700 authors from institutions around the world contributed to 291 empirical and descriptive articles and 104 instructional
cases published in the six journals reviewed. The average annual number of articles and cases is 132 for the current period; the average for the same set of journals for 2006–2009 is 97. Thus, an overall increase in productivity in the accounting education literature is observed, notably with three journals: (1) Advances in Accounting Education, (2) Accounting Education: An International Journal, and (3) Issues in Accounting Education. The other three journals maintained output consistent with the 2006–2009 review. The notable area of increased emphasis is IFRS.

6.2. Suggestions for future scholarship

In the conclusion of the 2006–2009 literature review in this series, the following observation is made (Apostolou et al., 2010, 181):

There continues to be a tendency to study one class, course, or institution, with reports of results only at the local level. To be influential, research must expand to include studies that cross institutional and geographic lines to assess whether an innovation that works in one context is effective in other contexts. That is, contextual effects are potentially important and worthy of empirical study. Studies to examine the impact of a treatment over time also are needed. Research suggestions for all key areas reviewed in this article are presented herein because in many cases these topics should be studied together (e.g., assurance of learning and curriculum).… Because accounting education research generally is conducted at one institution by one faculty member in one course, results are not generalizable to other institutions, courses, and faculty.

The same observations apply to the most of the accounting education research during 2010–2012. The majority of accounting education research is still usually conducted by one instructor in one course at one institution. Therefore, we cannot determine whether any such results are generalizable to other institutions and courses. However, during 2010–2012, more research is conducted across multiple universities [e.g., Ahmad et al. (2012) at seven Malaysian universities; Ameen et al. (2010) at four US universities]; multiple countries [e.g., Watty et al. (2010) in Australia, Hong Kong, and Singapore]; and multiple faculty and courses [e.g., Simkin et al. (2011)]. For the current period, samples from 19 countries are studied. The trend to increase the quantity of research conducted in multiple venues and contexts (e.g., universities, courses, instructors, countries) should continue so that results are more generalizable.

6.2.1. Research rigor

Three decades of accounting education literature reviews now exist. The themes of the literature have shifted over time, but the rigor of the empirical analysis has not kept pace with that observed in discipline-specific research. Discussion of journal ranking lists affirm that at many institutions research in education-focused accounting journals typically is not rewarded for promotion and tenure decisions and resource allocations. At universities that are primarily teaching-oriented, accounting education research is more likely to be rewarded. Thus a circular problem may exist: a significant segment of those who are capable of conducting rigorous empirical studies are not incentivized to do education research, which may distance faculty from the scholarship of teaching and learning (e.g., Adler, 2012). Thus it may be incumbent upon editors and editorial boards to emphasize research design, at least along the lines of the material presented in Table 5.

The methodology employed should be the most appropriate for the question, and the sample size sufficient to draw inferences. Accounting education research is maturing and should be elevated to this next step. Those evaluating and those engaged in research might refer to Table 5 with as a way to ensure that research bases are covered. The AACSB considers pedagogy a separate research category, so a suggestion for research is to identify and implement a way to evaluate the quality of the education journals in a way that improves scholarship and counts toward promotion and tenure decisions.

At the current stage of accounting education research, empirical research designs are less rigorous compared to education research produced in other disciplines such as psychology and education. Research in those disciplines first is usually grounded in theory, and the research designed to
appropriately test the theory. Much accounting research seems atheoretical and exploratory in nature. Accounting educators are motivated by some reason to adopt educational techniques or to experiment in their classrooms, and to test the effectiveness of the technique; however, frequently those designs are not based upon theory. Over time, accounting education research has become good at incorporating appropriate control variables (e.g., overall GPA, SAT scores, grade in first accounting course, gender, transfer status, age) that are associated with course performance, particularly as measured by exam scores. Extant research is weak with regard to theory, which may explain why 56.7% of the articles during 2010–2012 are descriptive in nature.

The scholarly impact of education-related articles should be explored. Guthrie et al. (2012) suggest the use of the Author Affiliations Index to prescribe journal quality. The BYU database now includes research rankings for accounting education journals based upon articles published in the Journal of Accounting Education and Issues in Accounting Education.29

The shortage of doctoral accounting faculty is a trend that persists and is expected to do so into the future (Fogarty & Holder, 2012). Incentives to attract and retain faculty should be studied, and administrators adequately informed about the issues. Alternative models to properly staff and support alternative institutional missions must be developed and tested to address this nontrivial problem.

6.2.2. Topical areas

The literature consistently shows that core professional competencies (e.g., communication, analytical skill, critical thinking) are important for success in accounting. Research must shift away from documenting the importance, which is now generally accepted, toward identifying the best ways to teach or learn these competencies, or the appropriate place in an individual’s career where these competencies should be learned/acquired. Similarly, experiences that provide students with the opportunity to interact with professionals (e.g., internships, service learning, mentoring by a professional) are shown to be valuable to support core competency development. Daugherty et al. (2012) document that the outsourcing of basic tax and audit work to other countries creates a pressure for entry-level accountants to possess even stronger core competencies as they begin their careers with more challenging work assignments. However, large classes and faculty facing research pressure impose constraints on creating realistic ways to teach beyond the technical topics. The time has come for some creativity to address how to effectively develop core competencies for accounting professionals.

The 150-h curriculum is now part of the norm. Research moving forward should address the best way to implement the requirement, because alternatives exist. Researchers should study whether the additional hours should be in the form of more undergraduate courses, graduate courses, accounting or business courses, or broad liberal arts experiences. For example, perhaps devoting the additional hours to becoming proficient in a second language might be as valuable as additional business or accounting courses. This particular topic might lend itself well to a longitudinal alumni survey. Feedback about accounting career outcomes based on how the 150-h requirement was completed should be addressed beyond the first hurdle of passing the CPA exam.

Studies of students are important because they provide insights into the current successes and opportunities for improvement in preparing the next generation of practitioners and academicians. Most of the empirical studies about students rely on survey-generated data and address perceptions and feelings about research topics that address student issues. Inferences are made about the efficacy of the experience based on analysis of the survey results. However, the association of self-perception and self-reported learning with actual performance outcomes is not empirically demonstrated. At this point, the literature is rife with suggestions regarding the identification and possible associations among student characteristics, instructional style, and learning and performance outcomes. Generally, the existing research is unable to offer cause-and-effect relationships due to a lack of theory, experimental method and direct measurement. If the discussion is to be informative for effective implementation, rigorous empirical examination of cause-and-effect associations is necessary.

29 The BYU education rankings are preliminary as of February 2013.
6.2.3. Instructional cases

As noted in Table A1, instructional cases amount to 26.3% of the total number of published articles in the six journals reviewed for the 3-year period. Appendix A is a best effort to categorize these cases for the benefit of those teaching in the specific topical areas. The proliferation of published cases begs two issues. First, the impact of the work is difficult to measure because an instructor’s use of a case does not produce a citation. An interesting research study would be to find a way to identify the impact of the published cases on the classroom and learning, including the attributes that make one case presentation superior to another. Second, with six journals publishing teaching cases, it seems appropriate that a publisher consider making reprints of cases in anthologies.30 A rich history of cases is now available in a broad spectrum of teaching areas that could be made readily available with the proper business arrangement. Faculty have shared the scholarship of teaching, yet it is an onerous task to search decades of six journals for appropriate resources.

6.2.4. Accreditation and assurance of learning (AOL)

Insufficient research is conducted on the accreditation process or the best practices of documenting AOL. A critical analysis of the accreditation process is essential to know if the objective of continuous improvement is achieved, or if the mission-driven approach actually differentiates institutions on quality metrics. Studies of the impact of accreditation on student learning during the degree and as preparation for a career would inform accrediting bodies, administrators, and faculty. In spite of the international focus of all six accounting education journals reviewed, the emphasis is exclusively on AACSB accreditation. However, other accrediting bodies exist, notably AMBA and EQUIS,31 which when added to AACSB yield the elite “triple accreditation” or “triple crown institution” designation. The value of accreditation, and in particular separate accreditation in accounting, to global stakeholders should be studied and reported upon. Each of the three accrediting bodies analyzes a business program through a different lens, and research that enhances understanding of the quality standards is appropriate. Ultimately it is important to know if the existing accreditation models make a difference to the quality of education (cost vs. benefit).

6.2.5. Avenues for future scholarship

Journal editors should consider encouraging essays from exemplars; scholars who are able and willing to share experiences and ideas for the future. A special issue devoted to invited essays from exemplars would be appropriate and useful for both students and new accounting faculty. In the current review, several articles offer tributes to scholars and their contributions to accounting education (Section 4.3.1), and two articles report on a survey of teaching exemplars (Stout & Wygal, 2010; Wygal & Stout, 2011). This avenue should be fully explored along the lines of research, teaching, and service to the academy.

The technological infrastructure of education is a changing landscape. Articles reviewed herein report that students appear to learn with in- and out-of-class modalities (e.g., video, clickers, online homework). The generation of students in college has technological savvy, so the challenge for academia is to stay abreast or ahead of student technology acceptance. Assessment of learning in an online environment may create opportunities for academic dishonesty not envisioned in a live classroom. These challenges must be identified, reported, and studied. The interaction of curriculum, technology, faculty incentives, and student motivation is complex and has not been studied in an organic way. Accounting education research has tended to focus on a single class, institution, or geographic area. The globalization of accounting is in place, and the emergence of a way to consider and reflect upon the new paradigm is essential.

The literature indicates that to assess the effect on learning individual accounting faculty members are experimenting with a variety of media and online platforms in their classrooms. Mostly, faculty are

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30 This review article includes cases published in the six general-purpose accounting education journals. Accounting cases may be published in other outlets (e.g., the Institute of Management Accountants publishes cases in the IMA Educational Case Journal, http://www.imanet.org/resources_and_publications/ima_educational_case_journal.aspx).

31 AMBA (the Association of MBAs based in London) that accredits MBA and DBA programs; EQUIS (European Quality Improvement System) assesses institutions as a whole that covers undergraduate through doctoral programs.
adopting media created externally to the university. With the advent of massive open online courses (MOOCs), development of media content by textbook publishers and other nonprofit entities, and the widespread use of publicly available online content (e.g., YouTube videos, including accounting tuto-

Table A1
Case counts by journal.

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<thead>
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<th>Journal</th>
<th>Number of cases</th>
<th>Total number of articles</th>
<th>Cases as a % of total</th>
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<tbody>
<tr>
<td>[1] Journal of Accounting Education</td>
<td>25</td>
<td>54</td>
<td>46.3</td>
</tr>
<tr>
<td>[2] Advances in Accounting Education</td>
<td>1</td>
<td>38</td>
<td>2.6</td>
</tr>
<tr>
<td>[4] Accounting Educators’ Journal</td>
<td>4</td>
<td>22</td>
<td>18.2</td>
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<tr>
<td>[5] Global Perspectives in Accounting Education</td>
<td>3</td>
<td>13</td>
<td>23.1</td>
</tr>
<tr>
<td>[6] Issues in Accounting Education</td>
<td>67</td>
<td>145</td>
<td>46.2</td>
</tr>
<tr>
<td>Total</td>
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<td>395</td>
<td>26.3</td>
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</table>

Table A2
Overview of published instructional cases by topic.

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<th>Table reference</th>
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</thead>
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<td>A3</td>
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</tr>
<tr>
<td>A4</td>
<td>Auditing and forensic accounting</td>
<td>30</td>
</tr>
<tr>
<td>A5</td>
<td>Corporate governance</td>
<td>9</td>
</tr>
<tr>
<td>A6</td>
<td>Financial accounting and reporting</td>
<td>29</td>
</tr>
<tr>
<td>A7</td>
<td>Governmental and nonprofit accounting</td>
<td>5</td>
</tr>
<tr>
<td>A8</td>
<td>Managerial accounting</td>
<td>11</td>
</tr>
<tr>
<td>A9</td>
<td>Taxation</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>104</td>
</tr>
</tbody>
</table>

Table A3
Cases in accounting information systems.


Table A4
Cases in auditing and forensic accounting.


determining which of these resources to maximize learning and how they affect learning will continue to be of interest to accounting education researchers. It seems that as technology evolves, accounting educators will probably spend less time creating content and more time identifying appropriate online content to use. The opportunities for rigorous research regarding how alternative media facilitate learning are extensive.

Reviews of accounting education research report results of three decades of work in curriculum, instruction, educational technology, faculty, and student issues. These reviews offer a vantage point from which to conduct meta-analysis on one or more of the specific topics. This analysis provides macro information about sample diversity, generalizability, and variation in reported outcomes. The results could lead to theory development, followed by well-executed research studies.

Acknowledgements

We are grateful to Professor James E. Rebele, to the Editor-in-Chief (David E. Stout), and to Emeritus Professor Richard M.S. Wilson for valuable assistance and guidance.

Appendix A. Summary of instructional cases

During the years 2010–2012, the six journals covered by this literature review published 395 articles. Of that total, 104 articles (26.3%) are instructional cases, as summarized in Table A1. As contrast, 21.2% of the 420 articles published during the 4-year period covered by the prior review (Apostolou et al., 2010) are instructional cases. Most of the instructional cases are published by two journals: (1) Journal of Accounting Education (25 of 104 = 24%) and (2) Issues in Accounting Education (67 of 104 = 64.4%). These cases are classified alphabetically according the topics they cover; an overview appears in Table A2. Some new trends in instructional cases are noted during the 2010–2012 period. Half include data and analysis supportive of the learning benefits of the cases, primarily from student survey perception data, which is more than double that has been provided in the past (see Tables A3–A9).

Table A5
Cases in corporate governance.

<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>The Whonka Chocolate Company: Corporate governance and controls over financial reporting.</td>
<td>Journal of Accounting Education, 29(4), 295–314</td>
</tr>
<tr>
<td>2</td>
<td>Generic Health Care Hospital: The road to an integrated risk management system.</td>
<td>Issues in Accounting Education, 26(2), 305–319</td>
</tr>
<tr>
<td>3</td>
<td>Controls on casino transaction kiosks at Great Mountain Casino: A case study.</td>
<td>Global Perspectives on Accounting Education, 7, 1–7</td>
</tr>
<tr>
<td>4</td>
<td>Wrigley's dual-class equity strategy.</td>
<td>Global Perspectives on Accounting Education, 8, 1–6</td>
</tr>
<tr>
<td>5</td>
<td>Sunshine Center: An instructional case evaluating internal controls in a small organization.</td>
<td>Issues in Accounting Education, 25(4), 709–720</td>
</tr>
<tr>
<td>7</td>
<td>Learning internal controls from a fraud case at Bank of China.</td>
<td>Issues in Accounting Education, 27(4), 1171–1192</td>
</tr>
<tr>
<td>8</td>
<td>Deviance at RKGA LLP.</td>
<td>Issues in Accounting Education, 27(2), 475–491</td>
</tr>
</tbody>
</table>

This review article includes cases published in the six general-purpose accounting education journals. Accounting cases may be published in other outlets (e.g., the Institute of Management Accountants publishes cases in the IMA Educational Case Journal, http://www.imanet.org/resources_and_publications/ima_educational_case_journal.aspx).
Table A6
Cases in financial accounting and reporting.


<table>
<thead>
<tr>
<th>Table A7</th>
<th>Cases in governmental and nonprofit accounting.</th>
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</table>

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<tr>
<th>Table A8</th>
<th>Cases in managerial accounting.</th>
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</table>

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<thead>
<tr>
<th>Table A9</th>
<th>Cases in taxation.</th>
</tr>
</thead>
</table>
References


